

# English Phonetics and Phonology

A practical course  
Second edition

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## List of symbols used

### 1. Symbols for phonemes

i	as in 'pit' pɪt	i:	as in 'key' ki:
e	as in 'pet' pet	ɑ:	as in 'car' kɑ:
æ	as in 'pat' pæt	ɔ:	as in 'core' kɔ:
ʌ	as in 'putt' pʌt	u:	as in 'coo' ku:
ɒ	as in 'pot' pɒt	ɜ:	as in 'cur' kɜ:
ʊ	as in 'put' pʊt		
ə	as in 'about, 'upper' əbaʊt, ʌpə		
ɛɪ	as in 'bay' beɪ	əʊ	as in 'go' gəʊ
aɪ	as in 'buy' baɪ	aʊ	as in 'cow' kaʊ
ɔɪ	as in 'boy' bɔɪ		
ɪə	as in 'peer' piə		
eə	as in 'pear' peə		
ʊə	as in 'poor' puə		
p	as in 'pea' pi:	b	as in 'bee' bi:
t	as in 'roe' təʊ	d	as in 'doe' dəʊ
k	as in 'cap' kæp	g	as in 'gap' gæp
f	as in 'fat' fæt	v	as in 'vat' væt
θ	as in 'thing' θɪŋ	ð	as in 'this' ðɪs
s	as in 'sip' sɪp	z	as in 'zip' zɪp
ʃ	as in 'ship' ʃɪp	ʒ	as in 'measure' meʒə
h	as in 'hat' hæt		
m	as in 'map' mæp	l	as in 'led' led
n	as in 'nap' næp	r	as in 'red' red
ŋ	as in 'hang' hæŋ	j	as in 'yet' jet
		w	as in 'wet' wet
tʃ	as in 'chin' tʃɪn	dʒ	as in 'gin' dʒɪn

2. *Non-phonemic symbols*

- i as in 'react', 'happy' riækt, hæpi
- u as in 'to each' tu i:tʃ
- ʔ glottal stop
- h aspiration, as in 'pin' pʰɪn
- ˌ syllabic consonant, as in 'button' bʌtɹ̩

3. *Stress and intonation*

- | tone-unit boundary
- || pause
- ' primary stress, as in 'open' 'əʊpən
- ˌ secondary stress, as in 'ice cream' ˌaɪs'kri:m

Tones: ˩ fall

˩ rise

˩ fall-rise

˩ rise-fall

˩ level

- ' stressed syllable in head, high pitch, as in 'please ˩do
- ˌ stressed syllable in head, low pitch, as in ˌplease ˩do
- ˌ stressed syllable in tail, as in ˌmy ˩turn
- ↑ extra pitch height, as in ↑ˌmy ˩turn

# 1 Introduction

You probably want to know what the purpose of this course is, and what you can expect to learn from it. An important purpose of the course is to explain how English is pronounced in the accent normally chosen as the standard for people learning the English spoken in England. If this was the only thing the course did, a more suitable title would have been "English Pronunciation". However, at the comparatively advanced level at which this course is aimed it is usual to present this information in the context of a general theory about speech sounds and how they are used in language; this theoretical context is called phonetics and phonology. Why is it necessary to learn this theoretical background? The same question arises in connection with grammar: at lower levels of study one is concerned simply with setting out how to form grammatical sentences, but people who are going to work with the language at an advanced level as teachers or researchers need the deeper understanding provided by the study of grammatical theory and related areas of linguistics. The theoretical material in the present course is necessary for anyone who needs to understand the principles regulating the use of sounds in spoken English.

The nature of phonetics and phonology will be explained as the course progresses, but one or two basic ideas need to be introduced at this introductory stage. In any language we can identify a small number of regularly used sounds (vowels and consonants) that we call **phonemes**; for example, the vowels in the words 'pin' and 'pen' are different phonemes, and so are the consonants at the beginning of the words 'pet' and 'bet'. Because of the notoriously confusing nature of English spelling it is particularly important to learn to think of English pronunciation in terms of phonemes rather than letters of the alphabet; one must be aware, for example, that the word 'enough' begins with the same vowel phoneme as that at the beginning of 'inept' and ends with the same consonant as 'stuff'. We often use special symbols to represent speech sounds; using the symbols chosen for this course, the word 'enough' would be written (transcribed) as *ɪnʌf*. A list of the symbols is given on p. ix.

The first part of the course is mainly concerned with identifying and describing the phonemes of English. Chapters 2 and 3 deal with vowels and Chapter 4 with some consonants. After this preliminary contact with the practical business of how some English sounds are pronoun-

ced, the fifth chapter looks at the phoneme and at the use of symbols in a theoretical way, while the corresponding Tape Unit revises the material of Chapters 2–4. After the phonemes of English have been introduced, the rest of the course goes on to look at larger units of speech such as the syllable and at aspects of speech such as stress (which could be roughly described as the relative strength of a syllable) and intonation (the use of the pitch of the voice to convey meaning). It would be a mistake to think that phonemes are studied first because they are the most important aspect of speech; the reason is simply that, in my experience, courses which begin with matters such as stress and intonation and deal with phonemes later are found more confusing by the students who use them.

You will have to learn a number of technical terms; you will find that when they are introduced in order to be defined or explained, they are printed in bold type. This has already been done in this Introduction in the case of, for example, **phoneme**, **phonetics** and **phonology**. Another convention to remember is that when words used as examples are given in spelling form, they are enclosed in single quotes (see for example 'pin', 'pen', etc.). Double quote marks are used where quote marks would normally be used; see, for example, "English Pronunciation" above.

Languages have different accents: they are pronounced differently by people from different geographical places, from different social classes, of different ages and different educational backgrounds. The word "accent" is often confused with **dialect**. We use the word "dialect" to refer to a variety of a language which is different from others not just in pronunciation but also in such matters as vocabulary, grammar and word-order. Differences of accent, on the other hand, are pronunciation differences only.

This course is not written for people who wish to study American pronunciation. The accent that we concentrate on and use as our model is the one that is most often recommended for foreign learners studying British English. It is most familiar as the accent used by most announcers and newsreaders on serious national and international BBC broadcasting channels. It has for a long time been identified by the rather quaint name **Received Pronunciation** (usually abbreviated to its initials, **RP**). The pronunciation of English in America is different from most accents found in Britain. There are exceptions to this – you can find accents in parts of Britain that sound American, and accents in America that sound English. But the pronunciation that you are likely to hear from most Americans does sound noticeably different from **RP**.

In talking about accents of English, the foreigner should be careful about the difference between **England** and **Britain**; there are many different accents in England, but the range becomes very much wider if the accents of Scotland, Wales and Northern Ireland (Scotland and

Wales are included in Britain and with Northern Ireland form the United Kingdom) are taken into account. Within the accents of England, the distinction that is most frequently made by the majority of English people is between Northern and Southern. This is a very rough division, and there can be endless argument over where the boundaries lie, but most people on hearing a pronunciation typical of someone from Lancashire, Yorkshire or other counties further north would identify it as "Northern". This course deals almost entirely with RP. There is, of course, no implication that other accents are inferior or less pleasant-sounding; the reason is simply that RP is the accent that has always been chosen by British teachers to teach to foreign learners, and is the accent that has been most fully described and has been used as the basis for textbooks and pronouncing dictionaries.

If you are a native speaker of English and your accent is different from RP you should try, as you work through the course, to note what your main differences are for purposes of comparison. I am not, of course, suggesting that you should try to change your pronunciation to RP! If you are a learner of English you are recommended to concentrate on RP initially, though when you have worked through the course and become familiar with this you will probably find it an interesting exercise to listen analytically to other accents of English, to see if you can identify the ways in which they differ from RP and even to learn to pronounce some examples of different accents yourself.

## Notes on problems and further reading

I feel that if we had a completely free choice of model accent it would be possible to find more suitable ones: many Scottish and Irish accents, for example, have a much more straightforward relationship between spelling and sounds than does RP, and have simpler vowel systems, and would therefore be easier for most foreign learners to acquire. Unfortunately, the majority of English teachers would be reluctant to learn to speak in the classroom with such an accent, so this is not a practical possibility.

For introductory reading on English pronunciation, see O'Connor (1980), pp. 5–6; Brown (1990), pp. 12–13; Gimson (1989), pp. 83–8. For a discussion of the status of RP, see Abercrombie (1965). For those who want to know more about British accents, a simple introduction is Hughes and Trudgill (1987); undoubtedly the major work on all accents of English is Wells (1982), which is a very valuable source of information (see especially pp. 117–18 and 279–301 on RP). A recent book that has caused a certain amount of controversy is Honey (1989),

which discusses the importance of accents (and RP in particular) in education, politics and social life. I disagree with many of the views expressed, but the book is interesting to read.

A problem area that has received a lot of attention is the choice of symbols for representing English phonemes. In the past, many different conventions have been proposed and students have often been confused by finding that the symbols used in one book are different from the ones they have learned in another. The symbols used in this book are in almost every respect those devised by A. C. Gimson for the *English Pronouncing Dictionary* (14th edition) and used in his *Introduction to the Pronunciation of English* (1989). These symbols are now used in most modern works on English pronunciation published in Britain, and can therefore be looked on as a *de facto* standard. Although good arguments can be made for some alternative symbols, the advantages of having a common set of symbols for pronunciation teaching materials and pronunciation entries in dictionaries are so great that it would be very regrettable to go back to the confusing diversity of earlier years.

The subject of symbolization is returned to in Chapter 5, section 5.2.

## Notes for teachers

Pronunciation teaching is not popular all the time with teachers and language-teaching theorists, and in recent years it has been fashionable to treat it as a rather outdated activity. It has been claimed, for example, that it attempts to make learners try to sound like native speakers of RP, that it discourages them through difficult and repetitive exercises and that it fails to give importance to communication. A good example of this attitude is to be found in Brown and Yule (1983), pp. 26–7. The criticism is misguided, I believe. No pronunciation course that I know has ever said that learners must try to speak perfect RP; to claim this mixes up models with goals: the *model* chosen is RP, but the *goal* is normally to develop the learner's pronunciation sufficiently to permit effective communication with native speakers. Pronunciation exercises can be difficult, of course, but if we eliminate everything difficult from our teaching, we may end up doing very little beyond getting students to play little communication games. It is, incidentally, quite incorrect to suggest that the classic works on pronunciation and phonetics teaching concentrated on mechanically perfecting vowels and consonants: Jones (1956), for example, writes “‘Good’ speech may be defined as a way of speaking which is clearly intelligible to all ordinary people. ‘Bad’ speech is a way of talking which is difficult for most people to understand . . . A person may speak with sounds very different from those of his hearers



and yet be clearly intelligible to all of them, as for instance when a Scotsman or an American addresses an English audience with clear articulation. Their speech cannot be described as other than 'good'."

There are many different and well-tried methods of teaching and testing pronunciation, many of which are used in this book. I do not feel that it is suitable in this book to go into a detailed analysis of these methods, but there is an excellent treatment of the subject in Kenworthy (1987). Gimson (1989) also discusses pronunciation teaching (chapter 12), and Brown and Yule (1983) contains some interesting ideas.

## 2 The production of speech sounds

### 2.1 Articulators above the larynx

All the sounds we make when we speak are the result of muscles contracting. The muscles in the chest that we use for breathing produce the flow of air that is needed for almost all speech sounds; muscles in the larynx produce many different modifications in the flow of air from the chest to the mouth. After passing through the larynx, the air goes through what we call the **vocal tract**, which ends at the mouth and nostrils. Here the air from the lungs escapes into the atmosphere. We have a large and complex set of muscles that can produce changes in the shape of the vocal tract, and in order to learn how the sounds of speech are produced it is necessary to become familiar with the different parts of the vocal tract. These different parts are called **articulators**, and the study of them is called **articulatory phonetics**.

Fig. 1 is a diagram that is used frequently in the study of phonetics. It represents the human head, seen from the side, displayed as though it had been cut in half. You will need to look at it carefully as the articulators are described, and you will often find it useful to have a mirror and a good light placed so that you can look at the inside of your mouth.

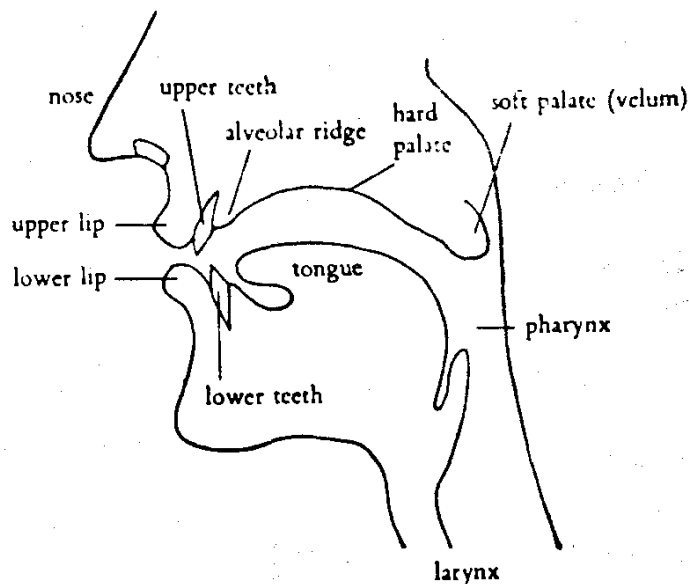


Fig. 1 The articulators

- i) The **pharynx** is a tube which begins just above the larynx. It is about 7 cm long in women and about 8 cm in men, and at its top end it is divided into two, one part being the back of the mouth and the other being the beginning of the way through the nasal cavity. If you look in your mirror with your mouth open, you can see the back of the pharynx.
- ii) The **velum** or soft palate is seen in the diagram in a position that allows air to pass through the nose and through the mouth. Yours is probably in that position now, but often in speech it is raised so that air cannot escape through the nose. The other important thing about the velum is that it is one of the articulators that can be touched by the tongue. When we make the sounds **k** and **g** the tongue is in contact with the lower side of the velum, and we call these **velar consonants**.
- iii) The **hard palate** is often called the “roof of the mouth”. You can feel its smooth curved surface with your tongue.
- iv) The **alveolar ridge** is between the top front teeth and the hard palate. You can feel its shape with your tongue. Its surface is really much rougher than it feels, and is covered with little ridges. You can only see these if you have a mirror small enough to go inside your mouth (such as those used by dentists). Sounds made with the tongue touching here (such as **t** and **d**) are called **alveolar**.
- v) The tongue is, of course, a very important articulator and it can be moved into many different places and different shapes. It is usual to divide the tongue into different parts, though there are no clear dividing lines within the tongue. Fig. 2 shows the tongue on a larger scale with these parts shown: **tip**, **blade**, **front**, **back** and **root**. (This use of the word “front” often seems rather strange at first.)
- vi) The **teeth** (upper and lower) are usually shown in diagrams like Fig. 1 only at the front of the mouth, immediately behind the lips. This is for the sake of a simple diagram, and you should remember that most speakers have teeth to the sides of their mouths, back almost to the soft palate. The tongue is in contact with the upper side teeth for many speech sounds. Sounds made with the tongue touching the front teeth are called **dental**.

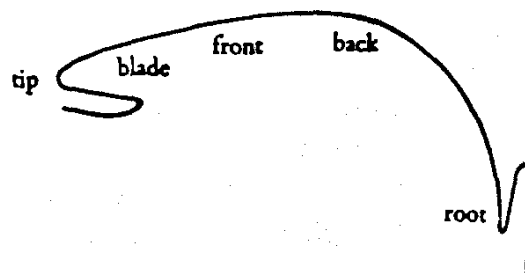


Fig. 2 Sub-divisions of the tongue

- vii) The lips are important in speech. They can be pressed together (when we produce the sounds p, b), brought into contact with the teeth (as in f, v), or rounded to produce the lip-shape for vowels like u:. Sounds in which the lips are in contact with each other are called bilabial, while those with lip-to-teeth contact are called labiodental.

The seven articulators described above are the main ones used in speech, but there are three other things to remember. Firstly, the larynx (which will be studied in Chapter 4) could also be described as an articulator – a very complex and independent one. Secondly, the jaws are sometimes called articulators; certainly we move the lower jaw a lot in speaking. But the jaws are not articulators in the same way as the others, because they cannot themselves make contact with other articulators. Finally, although there is practically nothing that we can do with the nose and the nasal cavity, they are a very important part of our equipment for making sounds (what is sometimes called our vocal apparatus), particularly nasal consonants such as m, n. Again, we cannot really describe the nose and the nasal cavity as articulators in the same sense as (i) to (vii) above.

## 2.2 Vowel and consonant

The words **vowel** and **consonant** are very familiar ones, but when we study the sounds of speech scientifically we find that it is not easy to define exactly what they mean. The most common view is that vowels are sounds in which there is no obstruction to the flow of air as it passes from the larynx to the lips. A doctor who wants to look at the back of a patient's mouth often asks the patient to say "ah"; making this vowel sound is the best way of presenting an unobstructed view. But if we make a sound like s or d it can be clearly felt that we are making it difficult or impossible for the air to pass through the mouth. Most people would have no doubt that sounds like s and d should be called consonants. However, there are many cases where the decision is not so easy to make. One problem is that some English sounds that we think of as consonants, such as the sounds at the beginning of the words 'hay' and 'way', do not really obstruct the flow of air more than some vowels do. Another problem is that different languages have different ways of dividing their sounds into vowel and consonant; for example, the usual sound produced at the beginning of the word 'red' is felt to be a consonant by most English speakers, but in some other languages (some dialects of Chinese, for example) the same sound is treated as one of the vowels.

If we say that the difference between vowels and consonants is a difference in the way that they are produced, there will inevitably be some cases of uncertainty or disagreement; this is a problem that cannot be avoided. It is possible to establish two distinct groups of sounds (vowels and consonants) in another way. Consider English words beginning with the sound *h*; what sounds can come next after this *h*? We find that most of the sounds we normally think of as vowels can follow (for example *e* in the word 'hen'), but practically none of the sounds we class as consonants. Now think of English words beginning with the two sounds *br*; we find many cases where a consonant can follow (for example *d* in the word 'bid', or *l* in the word 'bill'), but hardly any cases where a vowel may follow. What we are doing here is looking at the different contexts and positions in which particular sounds can occur; this is the study of the distribution of the sounds, and is of great importance in phonology. Study of the sounds found at the beginning and end of English words has shown that two groups of sounds with quite different patterns of distribution can be identified, and these two groups are those of vowel and consonant. If we look at the vowel-consonant distinction in this way, we must say that the most important difference between vowel and consonant is not the way that they are made, but their different distributions. Of course, the distribution of vowels and consonants is different for each language.

There are many interesting theoretical problems connected with the vowel-consonant distinction, but we will not return to this question. For the rest of this course it will be assumed that the sounds are clearly divided into vowels and consonants.

We begin the study of English sounds in this course by looking at vowels, and it is necessary to say something about vowels in general before turning to the vowels of English. We need to know in what ways vowels differ from each other. The first matter to consider is the shape and position of the tongue. It is usual to simplify the very complex possibilities by describing just two things: firstly, the vertical distance between the upper surface of the tongue and the palate, and secondly the part of the tongue, between front and back, which is raised highest. Let us look at some examples:

- i) Make a vowel like the *i:* in the English word 'see' and look in a mirror; if you tilt your head back slightly you will be able to see that the tongue is held up close to the roof of the mouth. Now make an *æ* vowel (as in the word 'cat') and notice how the distance between the surface of the tongue and the roof of the mouth is now much greater. The difference between *i:* and *æ* is a difference of tongue height, and we would describe *i:* as a relatively close vowel and *æ* as a relatively open vowel. Tongue height can be changed by moving the tongue up or down, or moving the lower jaw up or down. Usually we use some

combination of the two sorts of movement, but when drawing side-of-the-head diagrams such as Fig. 1 and Fig. 2 it is usually found simpler to illustrate tongue shapes for vowels as if tongue height was altered by tongue movement alone, without any accompanying jaw movement. So we would illustrate the tongue height difference between *i:* and *æ* as in Fig. 3.

- ii) In making the two vowels described above, it is the front part of the tongue that is raised. We could therefore describe *i:* and *æ* as comparatively front vowels. By changing the shape of the tongue we can produce vowels in which a different part of the tongue is the highest point. A vowel in which the back of the tongue is the highest point is called a **back vowel**. If you make the vowel in the word 'calm', which we write phonetically as *ɑ:*, you can see that the back of the tongue is raised. Compare this with *æ* in front of a mirror; *æ* is a front vowel and *ɑ:* is a back vowel. The vowel in 'too' (*u:*) is also a comparatively back vowel, but compared with *ɑ:* it is close.

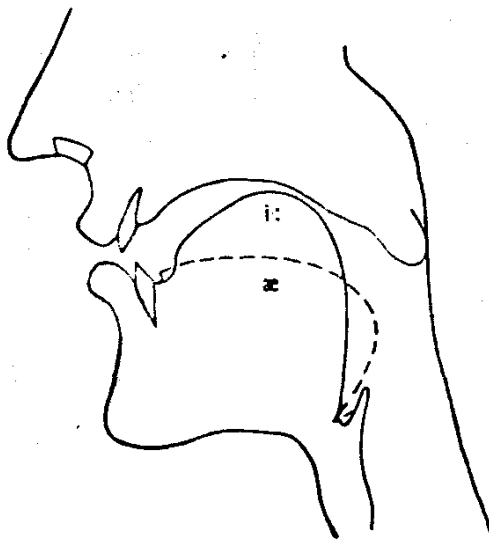


Fig. 3 Tongue positions for *i:* and *æ*

So now we have seen how four vowels differ from each other; we could show this in a simple diagram (Fig. 4). However, this diagram is rather inaccurate. Phoneticians need a very accurate way of classifying vowels, and have developed a set of vowels, arranged in a close-open, front-back diagram like Fig. 4, which are not the vowels of any

	Front	Back
Close	<i>i:</i>	<i>u:</i>
Open	<i>æ</i>	<i>ɑ:</i>

Fig. 4 Extreme vowel positions

particular language. These cardinal vowels are a standard reference system, and people being trained in phonetics have to learn to make them accurately and recognise them correctly. If you learn the cardinal vowels, you are not learning to make English sounds, but you *are* learning about the range of vowels that the human vocal apparatus can make, and also learning a useful way of describing, classifying and comparing vowels. They are recorded at the end of Cassette 2.

It has become traditional to locate cardinal vowels on a four-sided figure (quadrilateral) of the shape seen in Fig. 5 (the design used here is the one recommended by the International Phonetic Association in 1989). The exact shape is not really important – a square would do quite well – but we will use the traditional shape. The vowels on Fig. 5 are the so-called primary cardinal vowels; these are the vowels that are most familiar to the speakers of most European languages, and there are other cardinal vowels (secondary cardinal vowels) that sound less

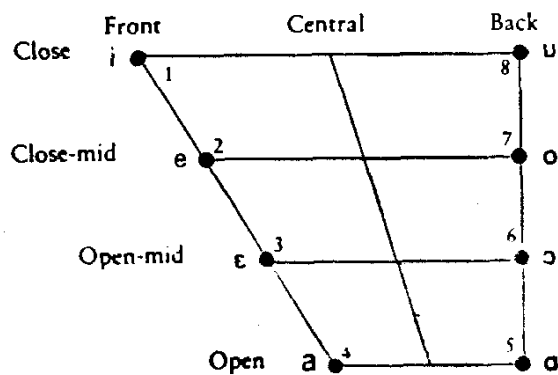


Fig. 5 Primary cardinal vowels

familiar. Cardinal vowel no. 1 has the symbol [i], and is defined as the vowel which is as close and as front as it is possible to make a vowel without obstructing the flow of air enough to produce friction noise; friction noise is the sort of hissing sound that one hears in consonants like s or f. Cardinal vowel no. 5 has the symbol [ɑ] and is defined as the most open and back vowel that it is possible to make. Cardinal vowel no. 8 [u], is fully close and back and no. 4 [a], is fully open and front. After establishing these extreme points, it is possible to put in intermediate points (vowels no. 2, 3, 6 and 7). Many students when they hear these vowels find that they sound strange and exaggerated; you must remember that they are *extremes* of vowel quality. It is useful to think of the cardinal vowel framework like a map of an area of country that you are interested in. Obviously, if the map is to be useful to you it must cover all the area; but if it covers the whole area of interest it must inevitably go a little way beyond that and include some places that you might never want to go to. However, it is still important to know where the edges of the map are drawn. When you are familiar with these

extreme vowels, you have (as mentioned above) learned a way of describing, classifying and comparing vowels. For example, we can say that the English vowel  $\text{æ}$  (the vowel in 'cat') is not as open as cardinal vowel no. 4 [a]. (In this course cardinal vowels will always be printed within square brackets to distinguish them clearly from English vowel sounds.)

We have now looked at how we can classify vowels according to their tongue height and their frontness or backness. There is another important variable of vowel quality and that is lip-rounding. Although the lips can have many different shapes and positions, we will at this stage consider only three possibilities. These are:

- i) Rounded, where the corners of the lips are brought towards each other and the lips pushed forwards. This is most clearly seen in cardinal vowel no. 8 [u].
- ii) Spread, with the corners of the lips moved away from each other, as for a smile. This is most clearly seen in cardinal vowel no. 1 [i].
- iii) Neutral, where the lips are not noticeably rounded or spread. The noise most English people make when they are hesitating (written 'er') has neutral lip position.

Now, using the principles that have just been explained, we will examine some of the English vowels.

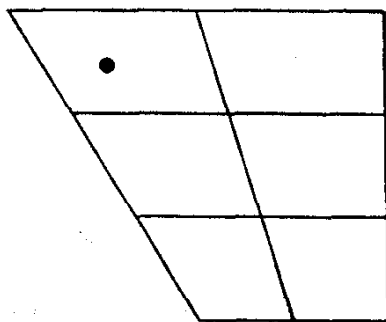
### 2.3 English short vowels



TU 2,  
Exs 1-4

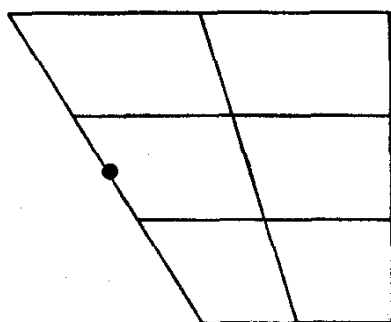
English has a large number of vowel sounds; the first ones to be examined are short vowels. The symbols for these short vowels are:  $\text{i}$ ,  $\text{e}$ ,  $\text{æ}$ ,  $\text{ʌ}$ ,  $\text{ɒ}$ ,  $\text{ʊ}$ . Short vowels are only *relatively* short; as we shall see later, vowels can have quite different lengths in different contexts.

Each vowel is described in relation to the cardinal vowels.

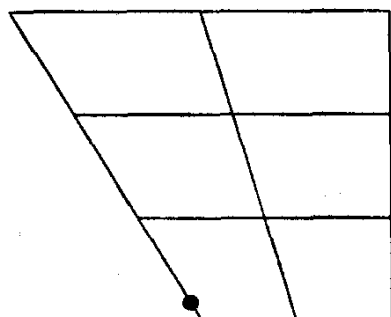


- 1 (example words: 'bit', 'pin', 'fish')  
The diagram shows that, though this vowel is in the close front area, compared with cardinal vowel no. 1 [i] it is more open, and nearer in to the centre. The lips are slightly spread.

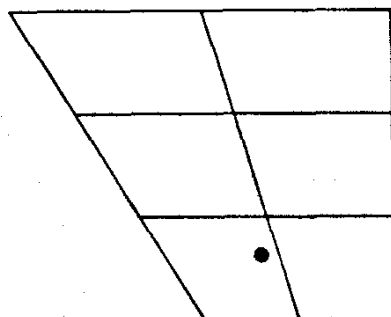




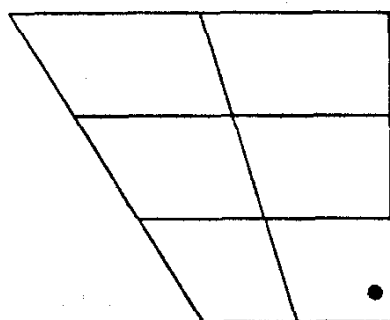
- e** (example words: 'bet', 'men', 'yes')  
This is a front vowel between cardinal vowel no. 2 [e] and no. 3 [ɛ]. The lips are slightly spread.



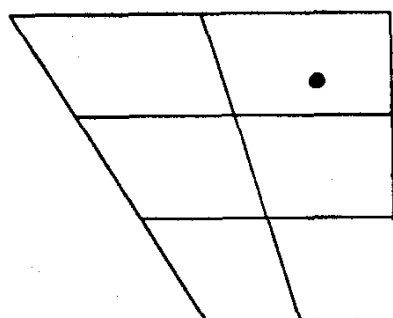
- æ** (example words: 'bat', 'man', 'gas')  
This vowel is front, but not quite as open as cardinal vowel no. 4 [a]. The lips are slightly spread.



- ʌ** (example words: 'but', 'some', 'rush')  
This is a central vowel, and the diagram shows that it is more open than the open-mid tongue height. The lip position is neutral.



- ɒ** (example words: 'pot', 'gone', 'cross')  
This vowel is not quite fully back, and between open-mid and open in tongue height. The lips are slightly rounded.



- ʊ** (example words: 'put', 'pull', 'push')  
The nearest cardinal vowel is no. 8 [u], but it can be seen that ʊ is more open and nearer to central. The lips are rounded.

There is one other short vowel, for which the symbol is ə. This central vowel, which is called schwa, is a very familiar sound in English; it is heard in the first syllable of the words 'about', 'oppose', 'perhaps', for example. Since it is different from the other vowels in several important ways, we will study it separately in Chapter 9.

### Notes on problems and further reading

One of the most difficult aspects of phonetics at this stage is the large number of technical terms that have to be learned. Every phonetics textbook gives a description of the articulators, and I will not attempt to list all of them. Two useful introductions are Ladefoged (1982), chapter 1, and O'Connor (1973), chapter 2. I would recommend Hardcastle (1976), chapter 5, to anyone wishing to go into a more detailed study of this subject.

The best-known discussion of the vowel–consonant distinction is by Pike (1943), pp. 66–79. He suggests that since the two approaches to the distinction produce such different results we should use new terms: sounds which do not obstruct the airflow (traditionally called "vowels") should be called *vocoids*, and sounds which do obstruct the airflow (traditionally called "consonants") should be called *contoids*. This leaves the terms "vowel" and "consonant" for use in labelling phonological elements according to their distribution and their role in syllable structure. While vowels are usually vocoids and consonants are usually contoids, this is not always the case: for example, j in 'yet' and w in 'wet' are (phonetically) vocoids but function (phonologically) as consonants.

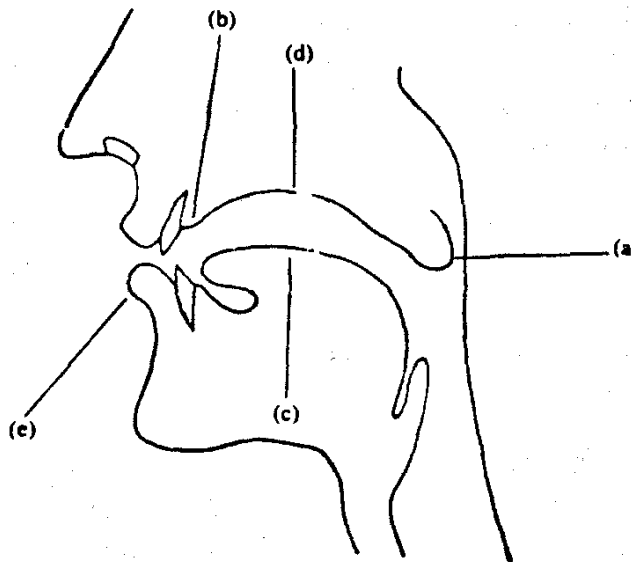
A study of the distributional differences between vowels and consonants in English is described in O'Connor and Trim (1953); a briefer treatment is in Gimson (1989), pp. 29–31 and 54–5.

The classification of vowels has a large literature. I would recommend Jones (1975), chapter 8, Ladefoged (1982), pp. 11–14 and Abercrombie (1967), pp. 55–60 and chapter 10. Ladefoged, in a series of studies, has examined experimentally most of the fundamental principles of vowel classification and his findings are summarised in Ladefoged (1967), pp. 50–142. The International Phonetic Association has recently revised its vowel classification system: see *Journal of the International Phonetic Association*, vol. 19, no. 2 (1989). It is much easier to understand the Cardinal Vowel system if you can hear the vowels themselves. I have included a recording of my pronunciation of the eight "Primary Cardinal Vowels" on Cassette 2, after the end of Tape Unit 20; it is not a good idea to mix up the study of these vowels

with practice on English vowels. In a more thorough presentation of the vowels I would have avoided using the notion of "Primary" vowels, since what makes them primary is to a large extent the fact that they are particularly familiar to speakers of the European languages that have been dominant in the development of contemporary phonetics, and we should try not to be influenced by such subjective factors. Consequently, at a more advanced level of study it is better to refer to vowels on the Cardinal Vowel quadrilateral simply by their tongue position and lip configuration.

## Written exercises

1. On the diagram provided, various articulators are indicated by numbered arrows (a–e). Give the names for the articulators.




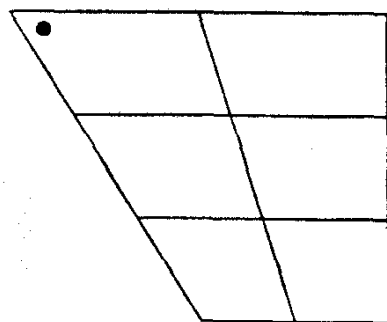
2. Using the descriptive labels introduced for vowel classification, say what the following Cardinal Vowels are:  
 a) u      b) e      c) a      d) i      e) ɔʊ
3. Draw a vowel quadrilateral and indicate on it the correct places for the following English vowels:  
 a) æ      b) ʌ      c) ɪ      d) e
4. Write the symbols for the vowels in the following words:  
 a) bread      b) rough      c) foot      d) hymn  
 e) pull      f) cough      g) mat      h) friend

### 3 Long vowels, diphthongs and triphthongs

#### 3.1 Long and short vowels

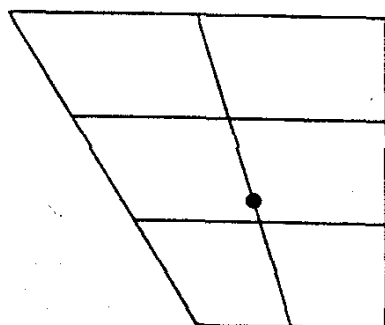
In Chapter 2 the short vowels were introduced. In this chapter we look at other types of English vowel sound. The first to be introduced here are the five long vowels; these are the vowels which tend to be longer than the short vowels in similar contexts. It is necessary to say "in similar contexts" because, as we shall see later, the length of all English vowel sounds varies very much according to context (such as the type of sound that follows them) and the presence or absence of stress. To remind you that these vowels tend to be long, the symbols consist of one vowel symbol plus a length-mark made of two dots  $\therefore$ . Thus we have:  $i:$ ,  $\alpha:$ ,  $\upsilon:$ ,  $u:$ . We will now look at these long vowels individually.

  
TU 3,  
Exs 1-5



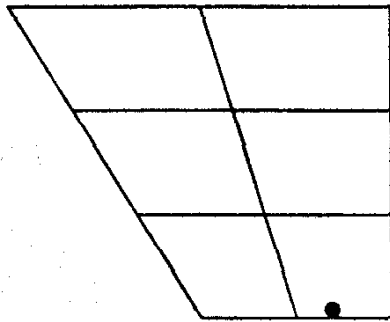
$i:$  (example words: 'bear', 'mean', 'peace')

This vowel is nearer to cardinal vowel no. 1 [i] (that is, it is more close and front) than the short  $\text{ɪ}$  vowel of 'bid', 'pin', 'fish' described in Chapter 2. Although the tongue shape is not much different from cardinal vowel no. 1, the lips are only slightly spread and this results in a rather different vowel quality.

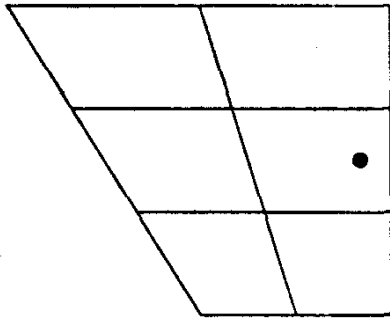


$\text{ɜ:}$  (example words: 'bird', 'fern', 'purse')

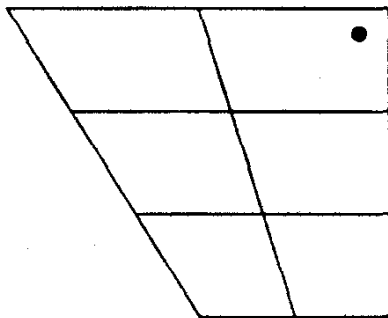
This is a central vowel which is well-known in most English accents as a hesitation sound (spelt 'er'), but which many foreigners find difficult to copy. The lip position is neutral.



- ɑ: (example words: 'card', 'half', 'pass')  
This is an open vowel in the region of cardinal vowel no. 5 [ɑ], but not as back as this. The lip position is neutral.



- ɔ: (example words: 'board', 'torn', 'horse')  
The tongue height for this vowel is between cardinal vowel no. 6 [ɔ] and no. 7 [o]. This vowel is almost fully back and has quite strong lip-rounding.



- u: (example words: 'food', 'soon', 'loose')  
This vowel is not very different from cardinal vowel no. 8 [u], but it is not quite so back nor so close, and the lips are only moderately rounded.

You may have noticed that these five long vowels are different from the six short vowels described in Chapter 2 not only in length but also in quality. If we compare some similar pairs of long and short vowels, for example *ɪ* with *i:*, or *ʊ* with *u:*, or *æ* with *ɑ:*, we can see distinct differences in quality (resulting from differences in tongue shape and position, and lip position) as well as in length. For this reason, all the long vowels have symbols which are different from those of short vowels; you can perhaps see that the long and short vowel symbols would still all be different from each other even if we omitted the length mark, so it is important to remember that the length mark is used not because it is essential but because it helps learners to remember the length difference. Perhaps the only case where a long and short vowel are closely similar in quality is that of *ə* and *ɜ:*; but *ə* is a special case, as we shall see later.

## 3.2 Diphthongs

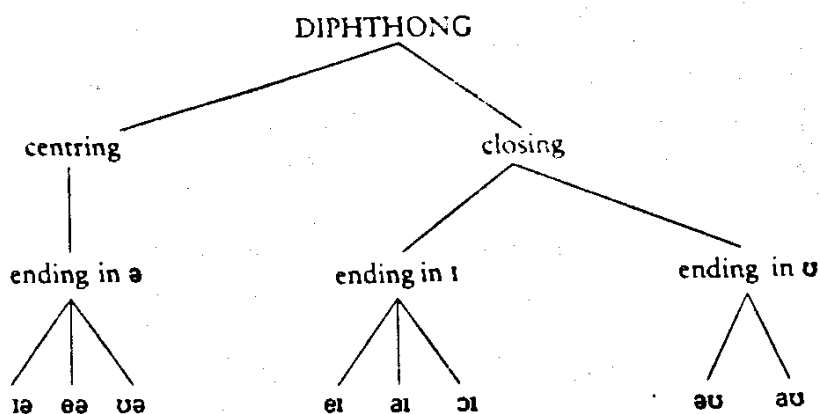


TU 3,  
Exs 6 & 7

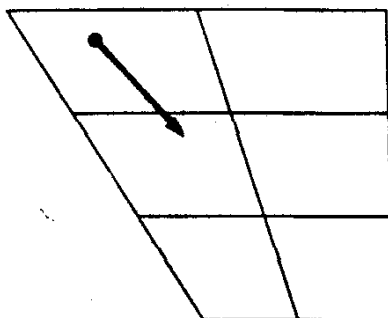
RP has a large number of diphthongs, sounds which consist of a movement or glide from one vowel to another. A vowel which remains constant and does not glide is called a **pure vowel**, and one of the most common pronunciation mistakes that result in a learner of English having a "foreign" accent is the production of pure vowels where a diphthong should be pronounced.

In terms of length, diphthongs are like the long vowels described above. Perhaps the most important thing to remember about all the diphthongs is that the first part is much longer and stronger than the second part; for example, most of the diphthong *aɪ* (as in the words 'eye', 'I') consists of the *a* vowel, and only in about the last quarter of the diphthong does the glide to *ɪ* become noticeable. As the glide to *ɪ* happens, the loudness of the sound decreases. As a result, the *ɪ* part is shorter and quieter. Foreign learners must, therefore, always remember that the last part of English diphthongs must not be made too strongly.

The total number of diphthongs is eight. The easiest way to remember them is in terms of three groups divided as in this diagram:

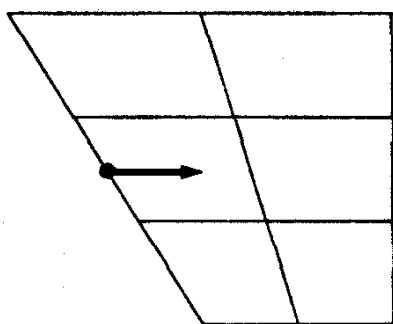


The centring diphthongs glide towards the *ə* (schwa) vowel, as the symbols indicate.



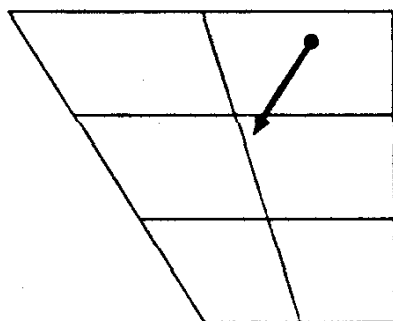
*ɪə* (example words: 'beard', 'Ian', 'fierce')

The starting point is a little closer than *ɪ* in 'bit', 'bin'.



**eə** (example words: 'aired', 'cairn', 'scarce')

This diphthong begins with the same vowel sound as the *e* of 'get', 'men'.

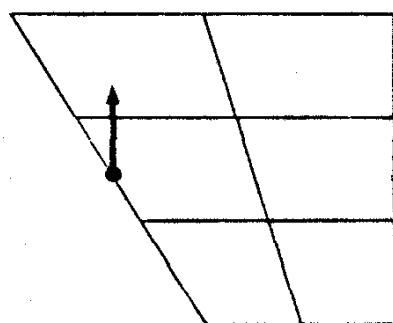


**ʊə** (example words: 'moored', 'tour')

This has a starting point slightly closer than *ʊ* in 'put', 'pull'.

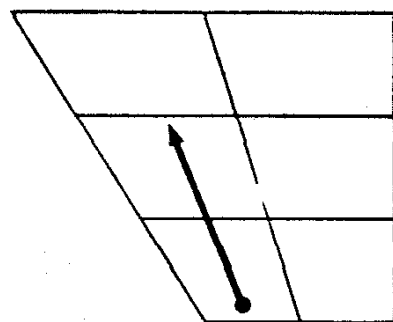
The closing diphthongs have the characteristic that they all end with a glide towards a closer vowel. Because the second part of the diphthong is weak, they often do not reach a position that could be called close. The important thing is that a glide from a relatively more open towards a relatively more close vowel is produced.

Three of the diphthongs glide towards *i*, as described below:



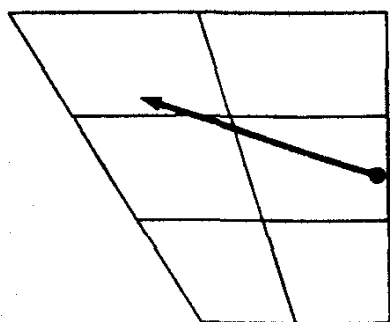
**eɪ** (example words: 'paid', 'pain', 'face')

The starting point is the same as the *e* of 'get', 'men'.



**aɪ** (example words: 'tide', 'time', 'nice')

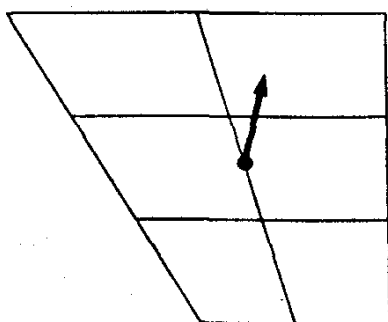
This diphthong begins with an open vowel which is between front and back; it is quite similar to the *ʌ* of the words 'cut', 'bun'.



ɔɪ (example words: 'void', 'loin', 'voice')

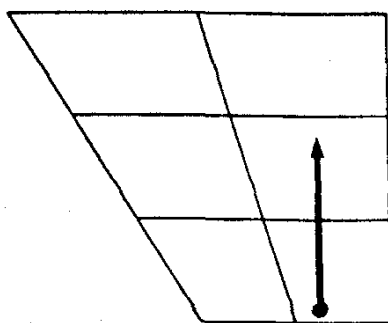
The first part of this diphthong has the same quality as ɔ: in 'ought', 'born'.

Two diphthongs glide towards ʊ, so that as the tongue moves closer to the roof of the mouth there is at the same time a rounding movement of the lips. This movement is not a large one, again because the second part of the diphthong is weak.



əʊ (example words: 'load', 'home', 'most')

The vowel position for the beginning of this is the same as for the "schwa" vowel ə, as found in the first syllable of the word 'about'. The lips may be slightly rounded in anticipation of the glide towards ʊ, for which there is quite noticeable lip-rounding.



aʊ (example words: 'loud', 'gown', 'house')

This diphthong begins with a vowel similar to ɑ: but a little more front. Since this is an open vowel, a glide to ʊ would necessitate a large movement. Usually in English the glide towards ʊ begins but is not completed, the end of the diphthong being somewhere between close-mid and open-mid in tongue height. There is only slight lip-rounding.



### 3.3 Triphthongs



TU 3,

Ex 8

The most complex English sounds of the vowel type are the triphthongs. They can be rather difficult to pronounce, and very difficult to recognise. A triphthong is a glide from one vowel to another and then to a third, all produced rapidly and without interruption. For example, a careful pronunciation of the word 'hour' begins with a vowel quality similar to  $\text{a:}$ , goes on to a glide towards the back close rounded area (for which we use the symbol  $\text{u}$ ), then ends with a mid-central vowel (schwa,  $\text{\text{ə}}$ ). We use the symbols  $\text{au}\text{\text{ə}}$  to represent the way we pronounce 'hour', but this is not always an accurate representation of the pronunciation.

The triphthongs can be looked on as being composed of the five closing diphthongs described in the last section, with  $\text{\text{ə}}$  added on the end. Thus we get:

$\text{ei} + \text{\text{ə}} = \text{ei}\text{\text{ə}}$

$\text{əu} + \text{\text{ə}} = \text{əu}\text{\text{ə}}$

$\text{ai} + \text{\text{ə}} = \text{ai}\text{\text{ə}}$

$\text{au} + \text{\text{ə}} = \text{au}\text{\text{ə}}$

$\text{ɔi} + \text{\text{ə}} = \text{ɔi}\text{\text{ə}}$

The principal cause of difficulty for the foreign learner is that in present-day English the extent of the vowel movement is very small, except in very careful pronunciation. Because of this, the middle of the three vowel qualities of the triphthong (that is, the  $\text{i}$  or  $\text{u}$  part) can hardly be heard and the resulting sound is difficult to distinguish from some of the diphthongs and long vowels.

We will not go through a detailed description of each triphthong. This is partly because there is so much variation in the amount of vowel movement according to how slow and careful the pronunciation is, and also because the "careful" pronunciation can be found by looking at the description of the corresponding diphthong and adding  $\text{\text{ə}}$  to the end. However, to help identify these triphthongs, some example words are given below:

$\text{ei}\text{\text{ə}}$  'layer', 'player'

$\text{əu}\text{\text{ə}}$  'lower', 'mower'

$\text{ai}\text{\text{ə}}$  'liar', 'fire'

$\text{au}\text{\text{ə}}$  'power', 'hour'

$\text{ɔi}\text{\text{ə}}$  'loyal', 'royal'

### Notes on problems and further reading

Long vowels and diphthongs can be seen as a group of vowel sounds that are consistently longer *in a given context* than the short vowels

described in the previous chapter. Some writers (particularly Americans) give the label *tense* to long vowels and diphthongs and *lax* to the short vowels. This is done (and explained) in Jakobson and Halle (1964), Chomsky and Halle (1968) and many others.

As I mentioned in the notes on Chapter 1, the choice of symbols has tended to vary from book to book, and this is particularly noticeable in the case of length-marks for long vowels (this issue comes up again in Chapter 5, section 5.2); you could read Gimson (1989), section 4; two works which are opposed to length-marks are Brown (1990) and Windsor Lewis (1975b), but at the present time the transcription with length-marks seems to be an agreed standard.

The phonemes *i:* and *u:* are usually classed as long vowels; it is worth noting that most English speakers pronounce them with something of a diphthongal glide, so that a possible alternative transcription could be *ɪi* and *ʊu* respectively. This is not normally proposed, however.

It seems that triphthongs in RP are in a rather unstable state, resulting in the loss of some distinctions: in the case of some speakers, for example, it is not easy to distinguish between 'tyre' *taɪə*, 'tower' *taʊə* and 'tar' *tɑ:*. BBC newsreaders often pronounce 'Ireland' as *ɑ:lənd*, particularly in the context 'Northern Ireland'. Gimson (1964) has suggested that a change in the phonemic system of RP is in progress in this area.

## Notes for teachers

I mention above that *i:* and *u:* are often pronounced as slightly diphthongal: although this glide is often noticeable, I have never found it helpful to try to teach foreign learners to pronounce *i:* and *u:* in this way. Foreign learners who wish to get close to the RP model should be careful not to pronounce the 'r' that is usually found in the spelling corresponding to *ɑ:*, *ɔ:* and *ɜ:* ('ar', 'or', 'er').

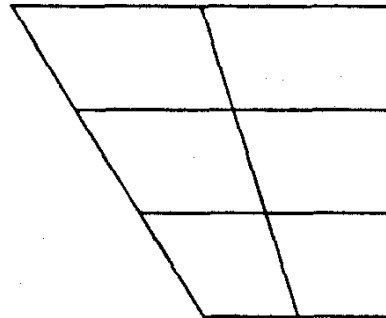
Most of the essential pronunciation features of the diphthongs are described in Chapter 3. Two additional points are worth making, I feel. The diphthong *ʊə* is included, but this is not used as much as the others – many English speakers use *ɔ:* in words like 'moor', 'mourn', 'tour'. However, I feel that it is preferable for foreign learners to learn this diphthong to ensure the maximum distinctiveness of words in pairs like 'moor' and 'more', 'poor' and 'paw'. The other diphthong that requires comment is *əʊ*. English speakers seem to be especially sensitive to the quality of this diphthong, particularly to the first part. It often happens that foreign learners, having understood that the first part of the diphthong is not a back vowel, exaggerate this by using a vowel that is

too front, producing a diphthong like [eʊ]; unfortunately, this gives the impression of a “posh” accent – it sounds like someone trying to copy an upper-class pronunciation, since [eʊ] for əʊ is very noticeable in the speech of the Royal Family.

## Written exercises

1. On the vowel diagram given below, indicate the glides for the diphthongs in the following words:

- |           |          |
|-----------|----------|
| a) fright | c) clear |
| b) home   | d) cow   |



2. Write the symbols for the long vowels in the following words:

- |          |          |         |
|----------|----------|---------|
| a) broad | d) learn | g) err  |
| b) ward  | e) cool  | h) seal |
| c) calf  | f) team  | i) curl |

3. Write the symbols for the diphthongs in the following words:

- |          |         |         |
|----------|---------|---------|
| a) tone  | d) way  | g) hair |
| b) style | e) beer | h) why  |
| c) out   | f) coil | i) they |

## 4 Voicing and consonants

### 4.1 The larynx

We begin this chapter by studying the larynx. The larynx has several very important functions in speech, but before we can look at these functions we must examine its anatomy and physiology, that is, how it is constructed and how it works.

The larynx is in the neck; it has several parts, shown in Fig. 6. Its main structure is made of **cartilage**, a material that is similar to bone but less hard. If you press down on your nose, the hard part that you can feel is cartilage. The larynx's structure is made of two large cartilages. These are hollow and are attached to the top of the **trachea**; when we breathe, the air passes through the trachea and the larynx. The front of the larynx comes to a point and you can feel this point at the front of your neck – particularly if you are a man and/or slim. This point is commonly called the **Adam's Apple**.

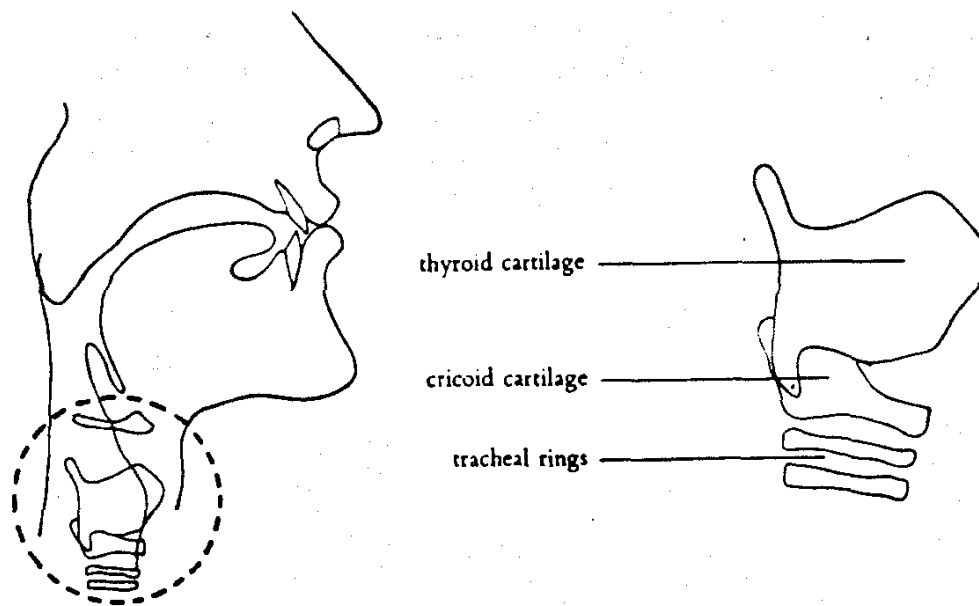


Fig. 6 The larynx

Inside the “box” made by these two cartilages are the **vocal folds**, two thick flaps of muscle rather like a pair of lips; an older name for

these is vocal cords. Looking down the throat is difficult to do, and requires special optical equipment, but Fig. 7 shows in diagram form the most important parts. At the front the vocal folds are joined together and fixed to the inside of the thyroid cartilage. At the back they are attached to a pair of small cartilages called the arytenoid cartilages so that if the arytenoid cartilages move, the vocal folds will move too.

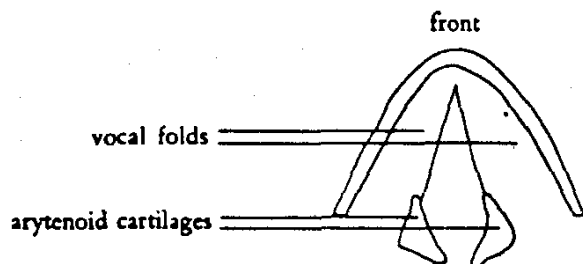


Fig. 7 The inside of the larynx seen from above

The arytenoid cartilages are attached to the top of the cricoid cartilage but they can move so as to move the vocal folds apart or together (Fig. 8). We use the word glottis to refer to the opening between the vocal folds. If the vocal folds are apart we say that the glottis is open; if they are pressed together we say that the glottis is closed. This seems quite

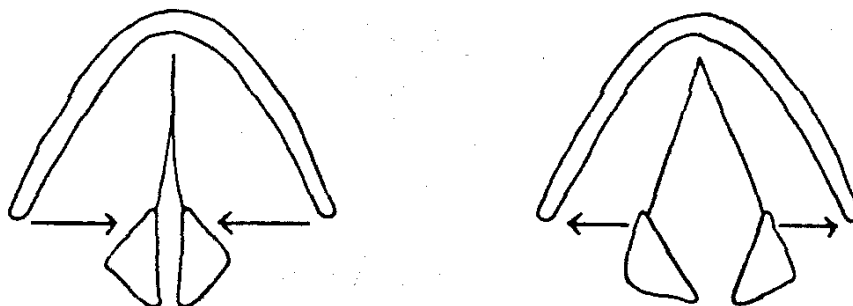


Fig. 8 Arytenoid cartilages causing closing and opening of the glottis

simple, but in fact we can produce a very complex range of changes in the vocal folds and their positions. These changes are often important in speech. Let us first look at four easily recognisable states of the vocal folds; it would be useful to practise moving your vocal folds into these different positions.

i) Wide apart.

The vocal folds are wide apart for normal breathing and usually during voiceless consonants like p, f, s (Fig. 9a). Your vocal folds are probably apart now.

ii) Narrow glottis.

If air is passed through the glottis when it is narrowed as in Fig. 9b,

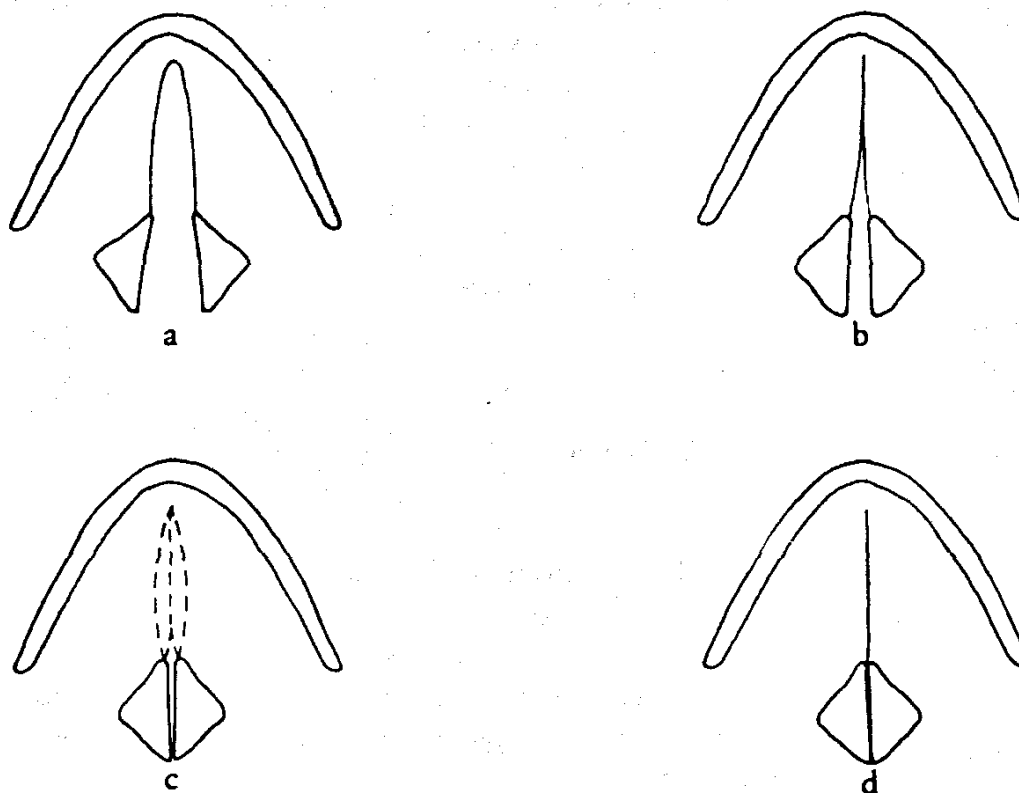


Fig. 9 Four different states of the glottis

the result is a fricative sound for which the symbol is **h**. The sound is not very different from a whispered vowel. It is called a **voiceless glottal fricative**. (Fricatives are discussed in more detail in Chapter 6.) Practise saying **ahahahahaha** – alternating between this state of the vocal folds and that described in (iii) below.

iii) Position for vocal fold vibration.

When the edges of the vocal folds are touching each other, or nearly touching, air passing through the glottis will usually cause vibration (Fig. 9c). Air is pressed up from the lungs and this air pushes the vocal folds apart so that a little air escapes. As the air flows quickly past the edges of the vocal folds, the folds are brought together again. This opening and closing happens very rapidly and is repeated regularly, averaging roughly between two and three hundred times per second in a woman's voice and about half that rate in adult men's.

iv) Vocal folds tightly closed.

The vocal folds can be firmly pressed together so that air cannot pass between them (Fig. 9d). When this happens in speech we call it a **glottal stop** or **glottal plosive**, for which we use the symbol **ʔ**. You can practise this by coughing gently; then practise the sequence **aʔaʔaʔaʔa**.

## 4.2 Respiration and voicing

Section 4.1 referred several times to air passing between the vocal folds. The normal way for this air flow to be produced is for some of the air in the lungs to be pushed out; when air is made to move out of the lungs we say that there is an egressive **pulmonic airstream**. All speech sounds are made with some movement of air, and the egressive pulmonic is by far the most commonly found in the languages of the world. There are other ways of making air move in the vocal tract, but they are not usually relevant in the study of English pronunciation, so we will not discuss them here.

How is air moved into and out of the lungs? It is important to know something about this, since it will make it easier to understand many aspects of speech, particularly the nature of stress and intonation. The lungs are like sponges that can fill with air, and they are contained within the rib cage (Fig. 10). If the rib cage is lifted upwards and outwards there is more space in the chest for the lungs and they expand, with the result that they take in more air. If we allow the rib cage to return to its rest position quite slowly, some of the air is expelled and can be used for producing speech sounds. If we wish to make the egressive pulmonic airstream continue without breathing in again (for example when saying a long sentence and not wanting to be interrupted) we can make the rib cage press down on the lungs so that more air is expelled.

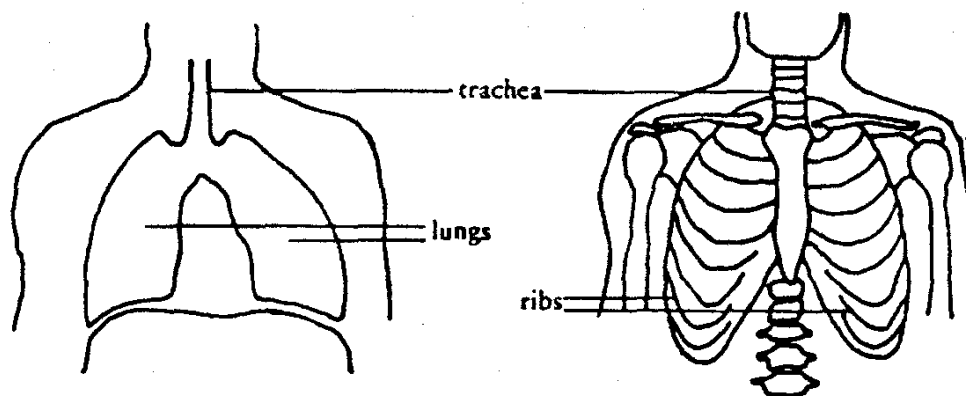


Fig. 10 The lungs and the rib cage

In talking about making air flow into and out of the lungs, the process has been described as though the air was free to pass with no obstruction. But as we saw in Chapter 2, to make speech sounds we must obstruct the air flow in some way – breathing by itself makes very little sound. We obstruct the airflow by making one or more obstructions or **strictures** in the vocal tract, and one place where we can make a stricture is in the larynx, by bringing the vocal folds close to

each other as described in the previous section. Remember that there will be no vocal fold vibration unless the vocal folds are in the correct position and the air below the vocal folds is under enough pressure to be forced through the glottis.

If the vocal folds vibrate we will hear the sound that we call voicing or phonation. There are many different sorts of voicing that we can produce – think of the differences in the quality of your voice between singing, shouting and speaking quietly, or think of the different voices you might use reading a story to young children in which you have to read out what is said by characters such as giants, fairies, mice or ducks; many of the differences are made with the larynx. We can make changes in the vocal folds themselves – they can, for example, be made longer or shorter, more tense or more relaxed or be more or less strongly pressed together. The pressure of the air below the vocal folds (the subglottal pressure) can also be varied. Three main differences are found:

- i) Variations in intensity – we produce voicing with high intensity for shouting, for example, and with low intensity for speaking quietly.
- ii) Variations in frequency – if the vocal folds vibrate rapidly, the voicing is at high frequency; if there are fewer vibrations per second the frequency is lower.
- iii) Variations in quality – we can produce different-sounding voice qualities, such as those we might call harsh, breathy, murmured or creaky.

We will consider the ways in which we make use of these variables in later chapters.

### 4.3 Plosives

A plosive is a consonant articulation with the following characteristics:

- One articulator is moved against another, or two articulators are moved against each other, so as to form a stricture that allows no air to escape from the vocal tract. The stricture is, then, total.
- After this stricture has been formed and air has been compressed behind it, it is released, that is, air is allowed to escape.
- If the air behind the stricture is still under pressure when the plosive is released, it is probable that the escape of air will produce noise loud enough to be heard. This noise is called plosion.
- There may be voicing during part or all of the plosive articulation.

To give a complete description of a plosive consonant we must describe what happens at each of the following four phases in its production:



- i) The first phase is when the articulator or articulators move to form the stricture for the plosive. We call this the **closure phase**.
- ii) The second phase is when the compressed air is stopped from escaping. We call this the **hold phase**.
- iii) The third phase is when the articulators used to form the stricture are moved so as to allow air to escape. This is the **release phase**.
- iv) The fourth phase is what happens immediately after (iii), so we will call it the **post-release phase**.

#### 4.4 English plosives

English has six plosive consonants, p, t, k, b, d, g. The glottal plosive ʔ occurs frequently but it is of less importance, since it is usually just an alternative pronunciation of p, t or k in certain contexts.

The plosives have different places of articulation. p and b are bilabial; the lips are pressed together (Fig. 11). t and d are alveolar; the tongue blade is pressed against the alveolar ridge (Fig. 12). Normally

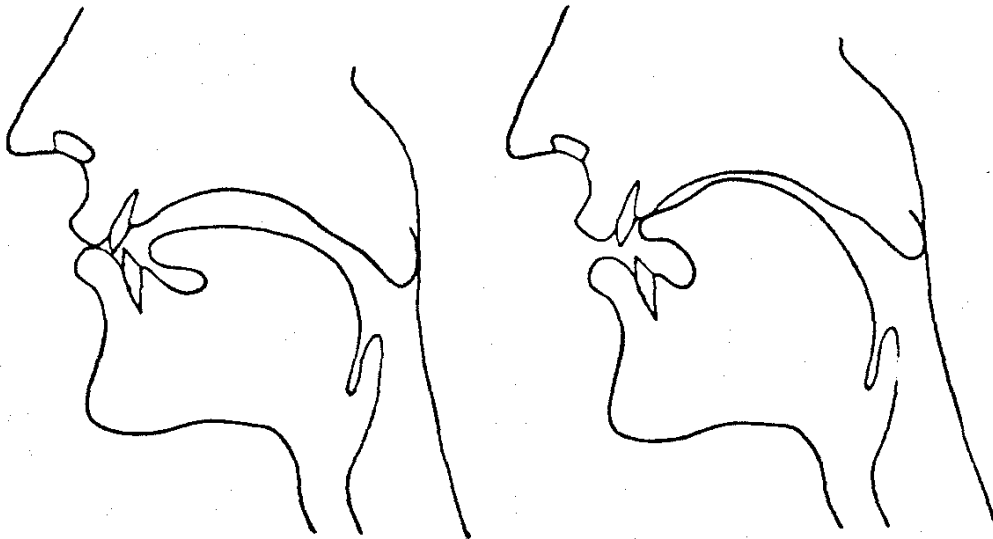


Fig. 11 Bilabial articulation

Fig. 12 Alveolar articulation

the tongue does not touch the front teeth as it does in the dental plosives found in many languages. k and g are velar; the back of the tongue is pressed against the area where the hard palate ends and the soft palate begins (Fig. 13).

p, t and k are always voiceless. b, d and g are sometimes fully voiced, sometimes partly voiced and sometimes voiceless; we will consider what they should be called in 4.5 below.

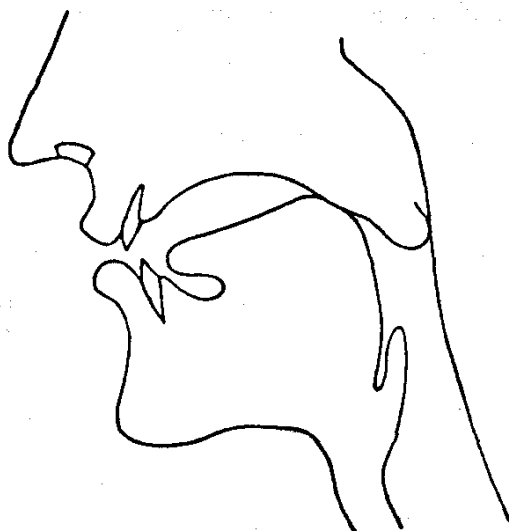


Fig. 13 Velar articulation

All six plosives can occur at the beginning of a word (**initial position**), between other sounds (**medial position**) and at the end of a word (**final position**). To begin with we will look at plosives preceding vowels (CV, where C stands for a consonant and V stands for a vowel), between vowels (VCV) and following vowels (VC). We will look at more complex environments in later chapters.



TU 4,  
Ex 1

i) Initial position (CV)

The closure phase for p, t, k and b, d, g takes place silently. During the hold phase there is no voicing in p, t, k; in b, d, g there is normally very little voicing – it begins only just before the release. If the speaker is pronouncing an initial b, d or g very slowly and carefully there may be voicing during the entire hold phase (the plosive is then **fully voiced**), while in rapid speech there may be no voicing at all.

The release of p, t, k is followed by audible plosion, that is, a burst of noise. There is then, in the post-release phase, a period during which air escapes through the vocal folds, making a sound like h. This is called **aspiration**. Then the vocal folds come together and voicing begins. The release of b, d, g is followed by weak plosion, and this happens at about the same time as, or shortly after, the beginning of voicing. The most noticeable and important difference, then, between initial p, t, k and b, d, g is the aspiration of the voiceless plosives p, t, k. The different phases of the plosive all happen very rapidly, of course, but the ear distinguishes clearly between p, t, k and b, d, g. If English speakers hear a fully voiced initial plosive they will hear it as one of b, d, g but will notice that it does not sound quite natural. If they hear a voiceless unaspirated plosive they will also hear that as one of b, d, g, because it is

aspiration, not voicing which distinguishes initial *p, t, k* from *b, d, g*. Only when they hear a voiceless aspirated plosive will they hear it as one of *p, t, k*; experiments have shown that we perceive aspiration when there is a delay between the sound of plosion and the beginning (or onset) of voicing.

In initial position *b, d, g* cannot be preceded by any consonant, but *p, t, k* may be preceded by *s*. When one of *p, t, k* is preceded by *s* it is unaspirated. From what was said above it should be clear that the unaspirated *p, t, k* of the initial combinations *sp, st, sk* have the sound quality that makes English speakers perceive a plosive as one of *b, d, g*; and if a tape recording of a word beginning with one of *sp, st, sk* is heard with the *s* removed, an initial *b, d* or *g* is heard by English speakers.

ii) Medial position (VCV)

The pronunciation of *p, t, k* and *b, d, g* in medial position depends to some extent on whether the syllables preceding and following the plosive are stressed. In general we can say that a medial plosive may have the characteristics either of final or of initial plosives.



TU 4,  
2 & 3

iii) Final position (VC)

Final *b, d, g* normally have little voicing; if there is voicing, it is at the beginning of the hold phase. *p, t, k* are, of course, voiceless. The plosion following the release of *p, t, k* and *b, d, g* is very weak and often not audible. The difference between *p, t, k* and *b, d, g* is primarily the fact that vowels preceding *p, t, k* are much shorter. The shortening effect of *p, t, k* is most noticeable when the vowel is one of the long vowels or diphthongs.

## 4.5 Fortis and lenis

Are *b, d, g* voiced plosives? The description of them makes it clear that it is not very accurate to call them “voiced”; in initial and final position they are scarcely voiced at all, and any voicing they may have seems to have no perceptual importance. Some phoneticians say that *p, t, k* are produced with more force than *b, d, g*, and that it would therefore be better to give the two sets of plosives (and some other consonants) names that indicate that fact; so the voiceless plosives *p, t, k* are sometimes called *fortis* (meaning ‘strong’) and *b, d, g* are then called *lenis* (meaning ‘weak’). It is probably true that *p, t, k* are produced with more force (though nobody has really proved it – force of articulation is very difficult to define and measure). On the other hand, the terms *fortis* and *lenis* are difficult to remember. Despite this, we shall follow the practice of many books and use these terms.

The plosive phonemes of English can be presented in the form of a table as shown below:

	PLACE OF ARTICULATION		
	bilabial	alveolar	velar
FORTIS ("voiceless")	p	t	k
LENIS ("voiced")	b	d	g

Tables like this can be produced for all the different consonants. Each major type of consonant (such as plosives like p, t and k, fricatives like s and z and nasals like m and n) obstructs the airflow in a different way, and these are classed as different manners of articulation.

## Notes on problems and further reading

**4.1, 4.2** If you need to know more about the larynx and about respiration in relation to speech, see Borden and Harris (1984), pp. 58–9; Ladefoged (1967), pp. 1–20; Hardcastle (1976), chapters 3 and 4.

**4.3** The outline of the stages in the production of plosives is based on Arnold (1967). In classifying consonants it is possible to go to a very high level of complexity if one wishes to account for all the possibilities. See for example Pike (1945), pp. 85–156 and Catford (1968).

**4.4** It has been pointed out that the transcription sb, sd, sg could be used quite appropriately instead of sp, st, sk; see Davidsen-Nielsen (1969).

The vowel length difference before final voiceless consonants is apparently found in many (possibly all) languages, but in English this difference, which is very slight in most languages, has become exaggerated so that it has become the most important factor in distinguishing between final p, t, k and b, d, g (see Chen, 1970). Some phonetics books wrongly state that b, d, g lengthen preceding vowels, rather than that p, t, k shorten them. The conclusive evidence on this point is that if we take the pair 'right' *raɪt* and 'ride' *raɪd*, and then compare 'rye' *raɪ*, the length of the *aɪ* diphthong when no consonant follows is practically the same as in 'ride'; the *aɪ* in 'right' is much shorter than the *aɪ* in 'ride' and 'rye'.

**4.5** The "fortis/lenis" distinction is a very complicated question. It is necessary to consider how one could measure "force of articulation"; many different laboratory techniques have been tried to see if the articulators are moved more energetically for fortis consonants, but all have proved inconclusive; the only difference that seems reasonably reliable is that fortis consonants have higher air pressure in the vocal

tract, but Lisker (1970) has argued convincingly that this is not conclusive evidence for “force of articulation”. It is possible to ask phonetically untrained speakers whether they feel more energy is used in pronouncing p, t, k than in b, d, g, but (as pointed out in Ashby, 1979) there are many difficulties in doing this. A useful review of the “force of articulation” question is in Catford (1977), pp. 199–208. I feel the best conclusion is that any term one uses to deal with this distinction (whether “fortis”/“lenis” or “voiceless”/“voiced”) is to be looked on as a cover term (similar to the notion of a “cover feature” in Ladefoged, 1965) – a term which has no simple physical meaning but which may stand for a large and complex set of phonetic characteristics.

## Written exercises

1. Try to write brief descriptions of the actions of the articulators and the respiratory system in the words given below. Here as an example is a description of the pronunciation of the word ‘be’ bi:

“Starting from the position for normal breathing, the lips are closed and the lungs are compressed to create air pressure in the vocal tract. The tongue moves to the position for a close front vowel, with the front of the tongue raised close to the palate. The vocal folds are brought close together and voicing begins; the lips then open, releasing the compressed air. Voicing continues for the duration of an i: vowel. Then the lung pressure is lowered, voicing ceases and the articulators return to the normal breathing position.”

Words to describe: (a) goat (b) ape

2. Indicate with a ˘ mark which of the following vowels and diphthongs are shortened as a result of a following fortis consonant:

- |              |              |              |
|--------------|--------------|--------------|
| a) tea ti:   | d) dark dɑ:k | g) egg eg    |
| b) meat mi:t | e) card kɑ:d | h) oak əʊk   |
| c) road təʊd | f) lip lɪp   | i) kite kaɪt |

3. Transcribe the following words:

- |          |           |          |
|----------|-----------|----------|
| a) bake  | d) bought | g) bored |
| b) goat  | e) tick   | h) guard |
| c) doubt | f) bough  | i) peak  |

## 5 The phoneme

### 5.1 The phoneme

In Chapters 2–4 we have been studying some of the sounds of English. It is now necessary to consider some fundamental theoretical questions. What do we *mean* when we use the word “sound”? How do we establish what are the sounds of English, and how do we decide how many there are of them?

When we speak, we produce a continuous stream of sounds. In studying speech we divide this stream into small pieces that we call segments. The word ‘man’ is pronounced with a first segment *m*, a second segment *æ* and a third segment *n*. It is not always easy to decide on the number of segments. To give a simple example, in the word ‘mine’ the first segment is *m* and the last is *n*, as in the word ‘man’ discussed above. But should we regard the *ai* in the middle as one segment or two? We will return to this question.

As well as the question of how we divide speech up into segments, there is the question of how many different sounds (or segment types) there are in English. Chapters 2 and 3 introduced the set of vowels found in English. Each of these can be pronounced in many slightly different ways, so that the total range of sounds actually produced by speakers is practically infinite. Yet we feel quite confident in saying that the number of English vowels is not more than twenty. Why is this? The answer is that if we put one of those twenty in the place of one of the others, we can change the meaning of a word. For example, if we substitute *æ* for *e* in the word ‘bed’ we get a different word: ‘bad’. But in the case of two slightly different ways of pronouncing what we regard as “the same sound”, we usually find that, if we substitute one for the other, a change in the meaning of a word does not result. For example, if we substitute a more open vowel (cardinal vowel no. 4 [a]) for the *æ* in the word ‘bad’, the word is still heard as ‘bad’.

The principles involved here may be easier to understand if we look at a similar situation related to the letters of the alphabet that we use in writing English. The letter of the alphabet in writing is a unit which corresponds fairly well to the unit of speech we have been talking about earlier in this chapter – the segment. In the alphabet we have five letters

that are called vowels: 'a', 'e', 'i', 'o', 'u'. If we choose the right context we can show how substituting one letter for another will change meaning. Thus with a letter 'p' before and a letter 't' after the vowel letter, we get the five words spelt 'pat', 'pet', 'pit', 'pot', 'put', each of which has a different meaning. We can do the same with sounds. If we look at the short vowels ɪ, e, æ, ʌ, ɒ, ʊ, for example, we can see how substituting one for another in between the plosives p and t gives us six different words as follows (given in spelling on the left):

'pit' pɪt  
'pet' pet  
'pat' pæt  
'putt' pʌt\*  
'pot' pɒt  
'put' pʊt

Let us return to the example of letters of the alphabet. If people who knew nothing about the alphabet saw these four characters:

A a ɑ u

they would not know that to users of the alphabet three of these characters all represent the same letter, while the fourth is a different letter. Of course, they would quickly discover, through noticing differences in meaning, that u is a different letter from the first three. What would our illiterate observers discover about these three? They would probably eventually come to the conclusion about the written characters a and ɑ that the former occurs most often in printed and typed writing while the latter is more common in handwriting, but that if you substitute one for the other it will not cause a difference in meaning. If our observers then examined a lot of typed and printed material they would eventually establish that a word that began with a when it occurred in the middle of a sentence would begin with A, and *never* with a, at the beginning of a sentence. They would also find that names could begin with A but *never* with a; they would conclude that A and a were different ways of writing the same letter and that a context in which one of them *could* occur was always a context in which the other could not. As will be explained below, we find similar situations in speech.

If you have not thought about such things before, you may find some difficulty in understanding the ideas that you have just read about. The principal difficulty lies in the fact that what is being talked about in our example of letters is at the same time something *abstract* (the alphabet, which you cannot see or touch) and something *real and concrete* (marks on paper). The alphabet is something that its users *know*; they also

\* A rather uncommon word, except to those who play golf.

know that it has twenty-six letters. But when the alphabet is used to write with, these letters appear on the page in a practically infinite number of different shapes and sizes.

Now we will leave the discussion of letters and the alphabet; these have only been introduced in this chapter in order to help explain some important general principles. Let us now go back to the sounds of speech and see how these principles can be explained. As was said earlier in this chapter, we can divide speech up into segments, and we can find great variety in the way these segments are made. But just as there is an abstract alphabet as the basis of our writing, so there is an abstract set of units as the basis of our speech. These units are called **phonemes**, and the complete set of these units is called the **phonemic system** of the language. The phonemes themselves are abstract, but there are many slightly different ways in which we make the sounds that represent these phonemes, just as there are many ways in which we may make a mark on a piece of paper to represent a particular (abstract) letter of the alphabet.

We find cases where it makes little difference which of two possible ways we choose to pronounce a sound. For example, the **b** at the beginning of a word such as 'bad' will usually be pronounced with practically no voicing. Sometimes, though, a speaker may produce the **b** with full voicing, perhaps in speaking very emphatically. If this is done, the sound is still identified as the phoneme **b**, even though we can hear that it is different in some way. We have in this example two different ways of making **b** – two different realisations of the phoneme. One can be substituted for the other without changing the meaning; the two realisations are said to be in **free variation**.

We also find cases in speech similar to the writing example of capital **A** and little **a** (where one can only occur where the other cannot). For example, we find that the realisation of **t** in the word 'tea' is aspirated (as are all voiceless plosives when they occur before stressed vowels at the beginning of syllables). In the word 'eat', the realisation of **t** is unaspirated (as are all voiceless plosives when they occur at the end of a syllable and are not followed by a vowel). The aspirated and unaspirated realisations are both recognised as **t** by English speakers despite their differences. But the aspirated realisation will never be found in the place where the unaspirated realisation is appropriate, and vice versa. When we find this strict separation of places where particular realisations can occur, we say that the realisations are in **complementary distribution**. One more technical term needs to be introduced: when we talk about different realisations of phonemes, we sometimes call these realisations **allophones**. In the last example, we were studying the aspirated and unaspirated allophones of the phoneme **t**. Usually we do not indicate different allophones when we write symbols to represent sounds.



## 5.2 Symbols and transcription

You have now seen a number of symbols of several different sorts. Basically the symbols are for one of two purposes: either they are symbols for phonemes (phonemic or phoneme symbols) or they are phonetic symbols (which is what the symbols were first introduced as).

We will look first at phonemic symbols. The most important point to remember is the rather obvious-seeming fact that the number of phonemic symbols must be exactly the same as the number of phonemes we decide exist in the language. It is rather like writing with a typewriter – there is a fixed number of keys that you can press. However, some of our phoneme symbols consist of two characters; for example, we usually treat tʃ (as in ‘chip’ tʃɪp) as one phoneme, so tʃ is a phoneme *symbol* consisting of two *characters* (t and ʃ).

One of the traditional exercises in pronunciation teaching by phonetic methods is that of phonemic transcription, where every speech sound must be identified as one of the phonemes and written with the appropriate symbol. (There are two different kinds of transcription exercise: in one, transcription from dictation, the student must listen to a person – or a tape-recording – and write down what they hear; in the other, transcription from a written text, the student is given a passage of dialogue written in orthography and must use phonemic symbols to represent how he or she thinks it would be pronounced by a speaker of RP). In a phonemic transcription, then, only the phonemic symbols may be used; this has the advantage that it is comparatively quick and easy to learn to use it. The disadvantage is that as you continue to learn more about phonetics you become able to hear a lot of sound differences that you were not aware of before, and students at this stage find it frustrating not to be able to write down more detailed information.

The phonemic system described for RP contains forty-four phonemes. We can display the complete set of these phonemes by the usual classificatory methods used by most phoneticians; the vowels and diphthongs can be located in the vowel quadrilateral, as was done in Chapters 2 and 3, and the consonants can be placed in a chart or table according to place of articulation, manner of articulation and voicing. Obviously, human beings can make many more sounds than these, and phoneticians use a much larger set of symbols when they are trying to represent sounds more accurately. The best-known set of symbols is that of the International Phonetic Association’s alphabet (the letters IPA are used to refer to the Association and also to its alphabet). The vowel symbols of the cardinal vowel system (plus a few others) are usually included on the chart of this alphabet, which is reproduced here (Table 1). It is important to note that in addition to the many symbols

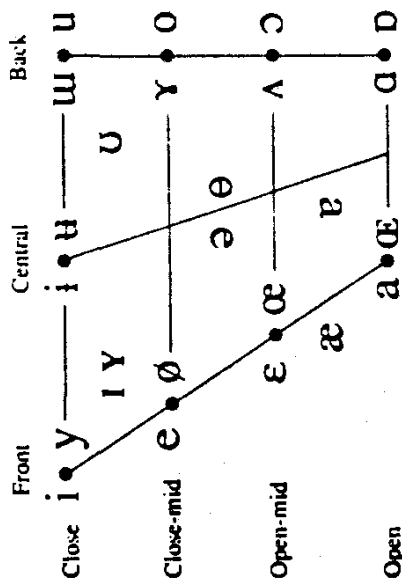
Table 1. *The International Phonetic Alphabet (revised to 1989)*

## CONSONANTS

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			
Ejective stop	pʼ			tʼ		tʼ	cʼ	kʼ	qʼ		
Implosive	ɓ ɗ			ɗ			ɗ	ɗ	ɗ		

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

# VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

## OTHER SYMBOLS

- M** Voiceless labial-velar fricative
- W** Voiced labial-velar approximant
- ɥ** Voiced labial-palatal approximant
- H** Voiceless epiglottal fricative
- ʕ** Voiced epiglottal fricative
- ʡ** Epiglottal plosive
- ɕ** Alveolo-palatal fricatives
- ʒ** Additional mid central vowel

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.

**kp ts**

# DIACRITICS

	Voiceless	n̥	More rounded	W	Labialized	tʷ dʷ	~	Nasalized	ẽ
	Voiced	ŋ	Less rounded	j	Palatalized	tʃ dʃ	n	Nasal release	d <sup>n</sup>
h	Aspirated	t <sup>h</sup> d <sup>h</sup>	Advanced	ɥ	Velarized	tʏ dʏ	l	Lateral release	d <sup>l</sup>
..	Breathy voiced	b̤ a̤	Retracted	ɨ	Pharyngealized	tʕ dʕ	ʔ	No audible release	d <sup>ʔ</sup>
~	Creaky voiced	b̰ a̰	Centralized	ẽ	Velarized or pharyngealized	t̤ d̤			
-	Linguolabial	ɫ ɫ̰	Mid-centralized	ẽ	Raised	ẽ (ɨ = voiced alveolar fricative)			
-	Dental	t̪ d̪	Syllabic	ɿ	Lowered	ẽ (β̞ = voiced bilabial approximant)			
-	Apical	t̟ d̟	Non-syllabic	ẽ	Advanced Tongue Root	ẽ			
-	Laminal	t̰ d̰	Rhoticity	ə̤	Retracted Tongue Root	ẽ			

## SUPRASEGMENTALS

	Primary stress	Secondary stress	TONES & WORD ACCENTS	LEVEL	CONTOUR
ˈ	ˈ	ˈ	ˈ	ˈ	ˈ
ˌ	ˌ	ˌ	ˌ	ˌ	ˌ
ː	ː	ː	ː	ː	ː
ˑ	ˑ	ˑ	ˑ	ˑ	ˑ
˒	˒	˒	˒	˒	˒
˓	˓	˓	˓	˓	˓
˔	˔	˔	˔	˔	˔
˕	˕	˕	˕	˕	˕
˖	˖	˖	˖	˖	˖
˗	˗	˗	˗	˗	˗
˘	˘	˘	˘	˘	˘
˙	˙	˙	˙	˙	˙
˚	˚	˚	˚	˚	˚
˛	˛	˛	˛	˛	˛
˜	˜	˜	˜	˜	˜
˝	˝	˝	˝	˝	˝
˞	˞	˞	˞	˞	˞
˟	˟	˟	˟	˟	˟
ˠ	ˠ	ˠ	ˠ	ˠ	ˠ
ˡ	ˡ	ˡ	ˡ	ˡ	ˡ
ˣ	ˣ	ˣ	ˣ	ˣ	ˣ
ˤ	ˤ	ˤ	ˤ	ˤ	ˤ
˥	˥	˥	˥	˥	˥
˦	˦	˦	˦	˦	˦
˧	˧	˧	˧	˧	˧
˨	˨	˨	˨	˨	˨
˩	˩	˩	˩	˩	˩
˪	˪	˪	˪	˪	˪
˫	˫	˫	˫	˫	˫
ˬ	ˬ	ˬ	ˬ	ˬ	ˬ
˭	˭	˭	˭	˭	˭
ˮ	ˮ	ˮ	ˮ	ˮ	ˮ
˯	˯	˯	˯	˯	˯
˰	˰	˰	˰	˰	˰
˱	˱	˱	˱	˱	˱
˲	˲	˲	˲	˲	˲
˳	˳	˳	˳	˳	˳
˴	˴	˴	˴	˴	˴
˵	˵	˵	˵	˵	˵
˶	˶	˶	˶	˶	˶
˷	˷	˷	˷	˷	˷
˸	˸	˸	˸	˸	˸
˹	˹	˹	˹	˹	˹
˺	˺	˺	˺	˺	˺
˻	˻	˻	˻	˻	˻
˼	˼	˼	˼	˼	˼
˽	˽	˽	˽	˽	˽
˾	˾	˾	˾	˾	˾
˿	˿	˿	˿	˿	˿

on the chart there are a lot of diacritics, marks which modify the symbol in some way; for example, the symbol for cardinal vowel no. 4 [a] may be modified by putting two dots above it. This centralisation diacritic then gives us the symbol [ä] for a vowel which is nearer to central than [a]. It would not be possible in this course to teach you to use all these symbols and diacritics, but someone who did know them all could write a transcription that was much more accurate in phonetic detail, and contained much more information, than a phonemic transcription. Such a transcription would be called a **phonetic transcription**; a phonetic transcription containing a lot of information about the exact quality of the sounds would be called a **narrow phonetic transcription**, while one which only included a little more information than a phonemic transcription would be called a **broad phonetic transcription**. In this course, phonetic symbols are used occasionally when it is necessary to give an accurate label to an allophone of some English phoneme, but we do not do any phonetic transcription of continuous speech. That is a rather specialised exercise. When symbols are used to represent precise phonetic values, not just to represent phonemes, we enclose them in square brackets [ ], as we have done already with cardinal vowels. In many phonetics books, phoneme symbols are enclosed within slant brackets / /, but this seems unnecessary for our purposes.

It should now be clear that there is a difference between phonemic symbols and phonetic symbols. Since the phonemic symbols do not have to indicate precise phonetic quality, it is possible to choose among several possible symbols to represent a particular phoneme; this has had the unfortunate result that different books on RP have used different symbols, causing quite a lot of confusion to students. In this course we are using the symbols now most frequently used in English publishing. It would be too long a task to examine other writers' symbols in detail, but it is worth considering some of the reasons for the differences. One factor is the complication and expense of using special symbols which create problems in typing and printing; it could for example be argued that a is a symbol that is found in practically all type-faces whereas æ is unusual, and that the a symbol should be used for the vowel in 'cat' instead of æ. Some writers have concentrated on producing a set of phoneme symbols that need the minimum number of special or non-standard symbols. Other writers have thought it important that the symbols should be as close as possible to the symbols that a phonetician would choose to give a precise indication of sound quality. To use the same example again, referring to the vowel in 'cat', it would be argued that if the vowel is noticeably closer than cardinal vowel no. 4 [a], it is more suitable to use the symbol æ, which is usually used to represent a vowel between open-mid and open. There can be disagreements about the most important characteristics of a sound that

a symbol should indicate; one example is the vowels of the words 'bit' and 'beat'. Some writers have claimed that the most important difference between them is that the former is short and the latter long, and transcribed the former with *i* and the latter with *i:* (the difference being entirely in the length mark); other writers have said that the length (or quantity) difference is less important than the quality difference, and transcribe the vowel of 'bit' with the symbol *ɪ* and that of 'beat' with *i*. Yet another point of view is that quality and quantity are both important and should both be indicated; this point of view results in a transcription using *ɪ* for 'bit' and *i:*, a symbol different from *ɪ* both in shape of symbol (suggesting quality difference) and in length mark (indicating quantity difference), for 'beat'. This is the approach taken in this course.

### 5.3 Phonology

Chapters 2, 3 and 4 were mainly concerned with matters of phonetics – the comparatively straightforward business of describing the sounds that we use in speaking. When we talk about how phonemes function in language, and the relationships among the different phonemes – when, in other words, we study the *abstract* side of the sounds of language – we are studying a related but different subject that we call phonology. Only by studying both the phonetics and the phonology of English is it possible to acquire a full understanding of the use of sounds in English speech. Let us look briefly at some areas that come within the subject of phonology; all these areas of study will be met frequently in the rest of the course.

#### *Study of the phonemic system*

It is sometimes helpful to think of the phonemic system as similar to the set of cards used in a card game, or the set of pieces used in a game of chess. In chess, for example, the exact shape and colour of the pieces are not important to the game as long as they can be reliably distinguished. But the number of pieces, the moves they can make and their relationship to all the other pieces are very important; we would say that if any of these were to be changed, the game would no longer be what we call chess. Similarly, playing-cards can be printed in many different styles and sizes; but while changing these things does not affect the game played with them, if we were to remove one card from the pack or add one card to it before the start of a game, nobody would

accept that we were playing the game correctly. In a similar way, we have a more or less fixed set of “pieces” (phonemes) with which to play the game of speaking English. There may be many slightly different realisations of the various phonemes, but the most important thing for communication is that we should be able to make use of the full set of phonemes.

### *Phoneme sequences and syllable structure*

In every language we find that there are restrictions on the sequences of phonemes that are used. For example, no English word begins with the consonant sequence *zbf* and no words end with the sequence *æh*. In phonology we must try to analyse what the restrictions and regularities are in a particular language, and it is usually found helpful to do this by studying the syllables of the language.

### *Suprasegmental phonology*

Many significant sound contrasts are not the result of differences between phonemes. For example, stress is important: when the word ‘import’ is pronounced with the first syllable sounding stronger than the second, English speakers hear it as a noun, whereas when the second syllable is stronger the word is heard as a verb. Intonation is also important: if the word ‘right’ is said with the pitch of the voice rising, it is likely to be heard as a question or as an invitation to a speaker to continue, while falling pitch is more likely to be heard as confirmation or agreement. These examples show sound contrasts that extend over several segments (phonemes), and such contrasts are called **suprasegmental**. We will look at many other aspects of suprasegmental phonology later in the course.

## **Notes on problems and further reading**

This chapter is theoretical rather than practical. There is no shortage of material to read on the subject of the phoneme, but much of it is rather difficult and assumes a lot of background knowledge. For basic reading I would suggest Katamba (1989), chapter 2; Hawkins (1984), chapter 1, or Gimson (1989), chapter 5, section 3. There are many classic works: Jones (1976, first published in 1950) is widely regarded as such, though it is often criticised nowadays for being superficial or even naive. Another classic is Pike’s *Phonemics* (1947), subtitled “A Technique for

Reducing Languages to Writing”: this is essentially a practical handbook for people who need to analyse the phonemes of unknown languages, and contains many examples and exercises. A third classic work is Trubetzkoy (1939, English translation by Baltaxe, 1969), while Bloomfield (1933) is also a historic work – see especially chapter 5. A modern book for more advanced reading is Lass (1984).

The subject of symbols is a large one: there is a very good survey in Abercrombie (1967), chapter 7. For a very brief outline of the field, see Roach (1991). The International Phonetic Association has tried as far as possible to keep to Roman-style symbols, though it is inevitable that these symbols have to be supplemented with diacritics. In 1989 the IPA held a special conference in Kiel, Germany, and papers were produced both before the meeting (to raise issues for discussion) and after it (to present the decisions made). Most of the former appeared in the *Journal of the International Phonetic Association*, vol. 19 no. 2 (1989); see also Roach (1987). Those interested in the history of the IPA’s way of classifying sounds should read Albright (1958). Some phoneticians working at the end of the last century tried to develop non-alphabetic sets of symbols whose shape would indicate all essential phonetic characteristics; if you are interested in this you could, in addition to reading the chapter of Abercrombie referred to above, read a little of Sweet’s writing on the subject in Henderson (1971), section 4.

It is obvious that one must choose between, on the one hand, symbols that are very informative but slow to write and, on the other, symbols that are not very precise but are quick and convenient to use. Pike (1943) presents at the end of his book an “alphabetic notation” designed to permit the coding of sounds with great precision on the basis of their articulation; an indication of the complexity of the system is the fact that the full specification of the vowel [o] requires eighty-eight characters. On the opposite side, many American writers have avoided the IPA symbols as too complex and have tried to use as far as possible symbols and diacritics which are already in existence for various special alphabetic requirements of European languages and which are available on typewriters. For example where the IPA has *ʃ* and *ʒ*, symbols not usually found outside phonetics, Americans use *š* and *ž*, the mark above the symbols being widely used for those Slavonic languages that do not use the Cyrillic alphabet. This American approach has many practical advantages, but is not capable of as much detail as the IPA set; part 1 of Trager and Smith (1951) illustrates the problems that are encountered when trying to symbolise a lot of phonetic detail with these conventions. In recent years there has been an important change due to the introduction of computer printers: dot-matrix and laser printers allow users to design their own symbols and print them alongside normal alphabetic characters. For recommendations on computer printing of phonetic symbols, see Wells (1987).

## Note for teachers

It should be made clear to students that the treatment of the phoneme in this chapter is only an introduction. It is difficult to go into detailed examples since very few symbols have been introduced at this stage, so further consideration of phonological issues is given in later chapters and it would not be advisable to go beyond the fundamental points at this stage.

## Written exercises

The words in the following list should be transcribed first *phonemically*, then (in square brackets) *phonetically*. In your phonetic transcription you can use the following diacritics:

b, d, g pronounced without voicing are transcribed [b̥, d̥, g̥]

p, t, k pronounced with aspiration are transcribed [p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup>]

i:, a:, o:, ɜ:, u: when shortened by a following fortis consonant should be transcribed iː̯, aː̯, oː̯, ɜː̯, uː̯

ɪ, e, æ, ʌ, ɒ, ʊ, ə when shortened by a following fortis consonant should be transcribed ɪ̯, e̯, æ̯, ʌ̯, ɒ̯, ʊ̯, ə̯. Use the same mark for diphthongs.

*Example* spelling: 'peat' phonemic: pi:t phonetic: [p<sup>h</sup>iːt]

*Words for transcription*

- |            |         |        |             |          |
|------------|---------|--------|-------------|----------|
| a) speed   | c) book | e) car | g) appeared | i) stalk |
| b) partake | d) goat | f) bad | h) toast    |          |



## 6 Fricatives and affricates

### 6.1 Production of fricatives and affricates

**Fricatives** are consonants with the characteristic that when they are produced, air escapes through a small passage and makes a hissing sound. All languages have fricatives, probably always including something like *s*. Fricatives are **continuant** consonants, which means that you can continue making them without interruption as long as you have enough air in your lungs. (Plosives, which were described in Chapter 4, are not continuants.) You can demonstrate the importance of the narrow passage for the air in the following ways:

- i) Make a long, hissing *s* sound and gradually lower your tongue so that it is no longer close to the roof of the mouth. The hissing sound will stop as the air passage gets larger.
- ii) Make a long *f* sound, and while you are producing this sound use your fingers to pull the lower lip away from the upper teeth. Notice how the hissing sound of the air escaping between teeth and lip suddenly stops.

**Affricates** are rather complex consonants. They begin as plosives and end as fricatives. A familiar example is the affricate heard at the beginning and end of the word 'church'. It begins with an articulation practically the same as the closure and hold phases of *t*, but instead of a rapid release with plosion and aspiration, as we would find in the word 'turn', the tongue moves to the position for the fricative *ʃ* that we find at the beginning of the word 'ship'. So the plosive is followed immediately by fricative noise. Since phonetically this affricate is composed of *t* and *ʃ* we represent it as *tʃ*, so that the word 'church' is transcribed as *tʃɜ:tʃ*.

However, the definition of an affricate must be a little more restricted than what has been said so far. We would not class *all* sequences of plosive plus fricative as affricates; for example, we find in the middle of the word 'breakfast' the plosive *k* followed by the fricative *f*. English speakers would generally not accept that *kf* forms a consonantal unit in the way that *tʃ* seems to. It is usually said that the plosive and the following fricative must be made with the same articulators – to use a technical term, the plosive and fricative must be **homorganic**. *k* and *f* are not homorganic, but *t* and *ʃ*, both being made with the tongue blade

against the alveolar ridge, *are* homorganic. This still leaves the possibility of quite a large number of affricates, since for example *t* is homorganic not only with *f* but also with *s*, so *ts* would also count as an affricate.

Although the affricates can be said to be composed of a plosive and a fricative, it is usual to regard them as being single, independent phonemes of English. In this way, *t* is one phoneme, *f* is another and *tf* yet another. We would say that the pronunciation of the word 'church' *tʃɜ:tʃ* is composed of three phonemes, *tʃ*, *ɜ:* and *tʃ*. We will look at this question of "two sounds = one phoneme" from the theoretical point of view in a later chapter.

## 6.2 The fricatives of English

English has quite a complex system of fricative phonemes. They can be seen in the table below:

	PLACE OF ARTICULATION				
	labiodental	dental	alveolar	palato-alveolar	glottal
FORTIS ("voiceless")	<b>f</b>	<b>θ</b>	<b>s</b>	<b>ʃ</b>	<b>h</b>
LENIS ("voiced")	<b>v</b>	<b>ð</b>	<b>z</b>	<b>ʒ</b>	

With the exception of glottal, each place of articulation has a pair of phonemes, one fortis and one lenis. This is similar to what was seen with the plosives. The fortis fricatives are said to be articulated with greater force than the lenis, and their friction noise is louder. The lenis fricatives have very little or no voicing in initial and final positions, but may be voiced when they occur between voiced sounds. The fortis fricatives have the effect of shortening a preceding vowel, as do fortis plosives. Thus in a pair of words like 'ice' and 'eyes' (*aɪs*, *aɪz*), the *aɪ* diphthong in the first word is considerably shorter than in the second. Since there is only one fricative with glottal place of articulation, the fortis-lenis distinction does not apply in that case. It would be rather misleading to call it fortis or lenis (which is why there is a line on the chart above dividing *h* from the other fricatives).



TU 6,  
Exs 1-3

We will now look at the fricatives separately, according to their place of articulation.

**f**, **v** (example words: 'fan', 'van'; 'safer', 'saver'; 'half', 'halve')

These are labiodental, that is, the lower lip is in contact with the upper teeth as shown in Fig. 14a. The fricative noise is never very strong and is scarcely audible in the case of *v*.

**θ, ð** (example words: 'thumb', 'thus'; 'ether', 'father'; 'breath', 'breathe')

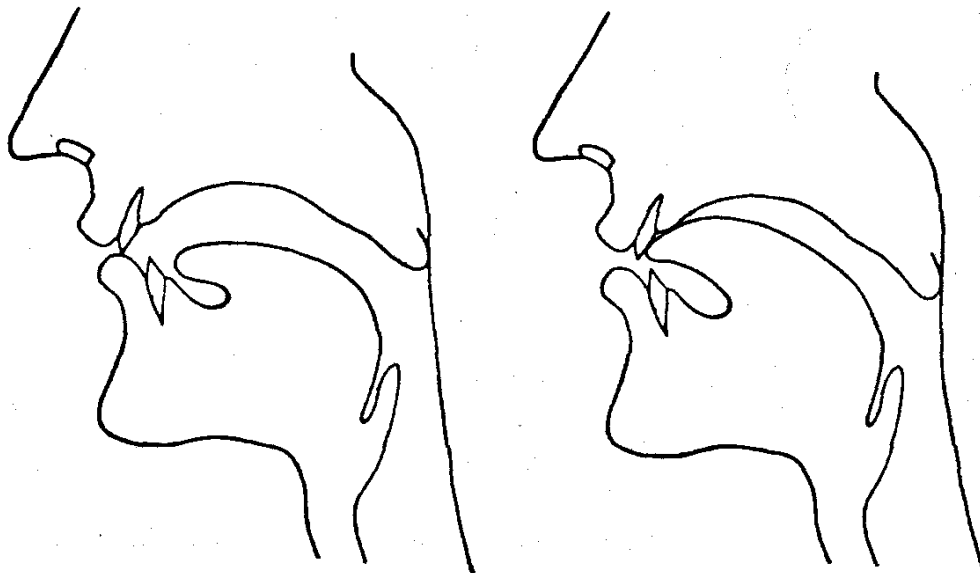


Fig. 14a Labiodental fricative      b Dental fricative

The dental fricatives have sometimes been described as if the tongue was actually placed between the teeth, and it is common for teachers to make their students do this when they are trying to teach them to make this sound. In fact, however, the tongue is normally placed *inside* the teeth, as shown in Fig. 14b, with the tip touching the inside of the lower front teeth and the blade touching the inside of the upper teeth. The air escapes through the gaps between the tongue and the teeth. As with *f* and *v*, the fricative noise is weak.

**s, z** (example words: 'sip', 'zip'; 'facing', 'phasing'; 'rice', 'rise')

These are alveolar fricatives, with the same place of articulation as *t* and *d*. The air escapes through a narrow passage along the centre of the tongue, and the sound produced is comparatively intense. The tongue position is shown in Fig. 12 in Chapter 4.

**ʃ, ʒ** (example words: 'ship' (initial *ʒ* is very rare in English); 'Russia', 'measure'; 'Irish', 'garage')

These fricatives are called palato-alveolar, which can be taken to mean that their place of articulation is partly palatal, partly alveolar. The tongue is in contact with an area slightly further back than that for *s, z* (see Fig. 14c). If you make *s*, then *ʃ*, you should be able to feel your

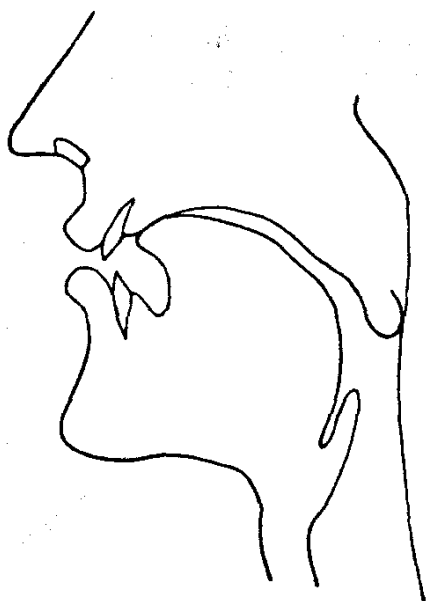


Fig. 14c Palato-alveolar fricative

tongue move backwards. The air escapes through a passage along the centre of the tongue, as in *s* and *z*, but the passage is a little wider. Most speakers of RP have rounded lips for *ʃ* and *ʒ*, and this is an important difference between these consonants and *s* and *z*.

*ʃ* is a common and widely-distributed phoneme, but *ʒ* is not. All the fricatives described so far (*f*, *v*, *θ*, *ð*, *s*, *z*) can be found in initial, medial and final positions, as shown in the example words. In the case of *ʒ*, however, the distribution is much more limited. Very few English words begin with *ʒ* (most of them have come into the language comparatively recently from French) and not many end with this consonant. Only medially, in words such as 'measure', 'usual' (*mɛʒə*, *ju:ʒʊəl*) is it found at all commonly.

*h* (example words: 'head', 'ahead', 'playhouse')

The place of articulation of this consonant is glottal. This means that the narrowing that produces the friction noise is between the vocal folds, as described in Chapter 4. If you breathe out silently, then produce *h*, you are moving your vocal folds from wide apart to close together. However, this is not producing speech. When we produce *h* in speaking English, many different things happen in different contexts. In the word 'hat', the *h* must be followed by an *æ* vowel. The tongue, jaw and lip positions for the vowel are all produced simultaneously with the *h* consonant, so that the glottal fricative has an *æ* quality. The same is found for all vowels following *h*; it always has the quality of the vowel it precedes, so that in theory if you could listen to a tape-recording of *h*-sounds cut off from the beginnings of different vowels in words like 'hit', 'hat', 'hot', 'hut', etc., you should be able to identify which vowel would have followed the *h*. One way of stating the above facts is to say

that *phonetically* h is a voiceless vowel with the quality of the voiced vowel that follows it.

Phonologically, h is a consonant. It is usually found before vowels. As well as being found in initial position it is found medially in words such as: 'ahead' əhed, 'greenhouse' gri:nhaʊs, 'boathook' bəʊθʊk. It is noticeable that when h occurs between voiced sounds (as in the words 'ahead' and 'greenhouse'), it is pronounced with voicing – not the normal voicing of vowels but a weak, slightly fricative sound called *breathy voice*. It is not necessary for foreign learners to attempt to copy this voicing, though it is important to pronounce h where it should occur in RP. Many English speakers are surprisingly sensitive about this consonant; they tend to judge as sub-standard a pronunciation in which h is missing, though in fact practically all English speakers, however carefully they speak, omit the h in unstressed pronunciations of the words 'her', 'he', 'him', 'his' and the auxiliary 'have', 'has', 'had', though few of them are aware that they do this.

There are two rather uncommon sounds that need to be introduced; since they are said to have some association with h, they will be mentioned here. The first is the sound produced by some speakers in words which begin orthographically (that is, in their spelling form) with 'wh'; most RP speakers pronounce the initial sound in such words (e.g. 'which', 'why', 'whip', 'whale') as w, but there are some (particularly when they are speaking clearly or emphatically) who pronounce the sound used by most American and Scottish speakers, a *voiceless* fricative with the same lip, tongue and jaw position as w. The phonetic symbol for this voiceless fricative is ʍ. We can find pairs of words showing the difference between this sound and the voiced sound w (which is introduced in the next chapter):

'witch' wɪtʃ	'which' ʍɪtʃ
'wail' weɪl	'whale' ʍeɪl
'Wye' waɪ	'why' ʍaɪ
'wear' weə	'where' ʍeə

The obvious conclusion to draw from this is that, since substituting one sound for the other causes a difference in meaning, the two sounds are two different phonemes. It is *therefore* rather surprising to find that practically all writers on the subject of the phonemes of English decide that this answer is not correct, and that the sound ʍ in 'which', 'why', etc., is *not* a phoneme of English but is a realisation of a sequence of two phonemes, h and w. Fortunately we do not need to worry about this problem in RP; we can make the decision to exclude this sound altogether from the accent we are describing. However, it should be noted that in the analysis of the many accents of English that do have a "voiceless w" there is not much more theoretical justification in treating the sound as ɪ plus w than there is for treating p as h plus b.

Whether the question of this sound is approached phonetically or phonologically, there is no h sound in the “voiceless w”.

A very similar case is the sound found at the beginning of words such as ‘huge’, ‘human’, ‘hue’. Phonetically this sound is a voiceless palatal fricative (for which the phonetic symbol is  $\ç$ ); there is no glottal fricative at the beginning of ‘huge’, etc. However, it is usual to treat this sound as h plus j (the latter is another consonant that is to be introduced in the next chapter – it is the sound at the beginning of ‘yes’, ‘yet’). Again we can see that a phonemic analysis does not necessarily have to be exactly in line with phonetic facts. If we were to say that these two sounds  $\mathfrak{M}$  and  $\ç$  were phonemes of English, we would have two extra phonemes that do not occur very frequently. We will follow the usual practice of transcribing the sound at the beginning of ‘huge’, etc., as hj just because it is convenient and common practice.

### 6.3 The affricates



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4 & 5

$tʃ$ ,  $dʒ$  are the only two affricate phonemes in English. As with the plosives and most of the fricatives, we have a fortis/lenis pair, and the voicing characteristics are the same as for these other consonants.  $tʃ$  is slightly aspirated in the positions where p, t, k are aspirated, but not strongly enough for it to be necessary for foreign learners to give much attention to it. The place of articulation is the same as for  $ʃ$ ,  $ʒ$ , that is, palato-alveolar. This means that the t component of  $tʃ$  has a place of articulation rather further back in the mouth than the t plosive usually has. When  $tʃ$  is final in the syllable it has the effect of shortening a preceding vowel, as do other fortis consonants.  $tʃ$  and  $dʒ$  often have rounded lips.

### 6.4 Fortis consonants

All the consonants described so far, with the exception of h, belong to pairs distinguished by the difference between fortis and lenis. Since the remaining consonants to be described are not paired in this way, a few points that still have to be made about fortis consonants are included in this chapter.

The first point concerns the shortening of a preceding vowel by a syllable-final fortis consonant. As was said in Chapter 4, the effect is

most noticeable in the case of long vowels and diphthongs, though it does also affect short vowels.

What happens if something other than a vowel precedes a fortis consonant? This arises in syllables ending with *l*, *m*, *n* or *ŋ*, followed by a fortis consonant such as *p*, *t*, *k*, as in 'belt' *belt*, 'bump' *bʌmp*, 'bent' *bent*, 'bank' *bæŋk*. The effect on those continuant consonants is the same as on a vowel – they are considerably shortened.

A similar question arises with *initial* fortis consonants. When *p*, *t*, *k* come at the beginning of a syllable and are followed by a vowel, they are aspirated, as was explained in Chapter 4. This means that the beginning of a vowel is voiceless in this context. However, *p*, *t*, *k* may be followed not by a vowel but by one of *l*, *r*, *w*, *j*. These voiced continuant consonants undergo a similar process – they lose their voicing. So words like 'play' *pleɪ*, 'tray' *treɪ*, 'quick' *kwɪk* contain *devoiced* *l*, *r*, *w*, whereas 'lay', 'ray', 'wick' contain *voiced* *l*, *r*, *w*. Consequently, if for example 'tray' were to be pronounced without devoicing of the *r* (i.e. with fully voiced *r*) English speakers would hear the word 'dray'

Voiceless consonants are usually articulated with open glottis, i.e. with the vocal folds separated. This is always the case with fricatives, where airflow is essential for successful production. However, with plosives an alternative possibility is to produce the consonant with completely *closed* glottis. This type of articulation is found quite widely in English pronunciation, including that of younger speakers of RP. This *glottalised* pronunciation, in which a glottal stop occurs just before *p*, *t*, *k* or *tʃ*, is only found in certain contexts, and foreign learners usually find the rules too difficult to learn, from the practical point of view; it is therefore simpler to keep to the more conservative pronunciation and not try to use glottalisation. However, it is worth pointing out the fact that this occurs, since many learners notice the glottal stops and want to know what it is that they are hearing. A few examples are given below.

The most widespread glottalisation is that of *tʃ* at the end of a stressed syllable (I leave defining what "stressed syllable" means until Chapter 8). If we use the symbol *ʔ* to represent a glottal closure, the phonetic transcription for various words containing *tʃ* can be given as follows:

	<i>With glottalisation</i>	<i>Without glottalisation</i>
'nature'	<i>neɪʔtʃə</i>	<i>nertʃə</i>
'catching'	<i>kæʔtʃɪŋ</i>	<i>kætʃɪŋ</i>
'riches'	<i>ɹɪʔtʃɪz</i>	<i>ɹɪtʃɪz</i>

There is similar glottalisation of *p*, *t*, *k*, though this is not found so regularly. It normally happens when the plosive is followed by another consonant or a pause; for example:

	<i>With glottalisation</i>	<i>Without glottalisation</i>
'actor'	æʔktə	æktə
'petrol'	peʔtrəl	petrəl
'mat'	mæʔt	mæt
'football'	fʊʔtbɔ:l	futbɔ:l

Foreign learners do not need to learn this type of pronunciation, but many seem to acquire it unintentionally through speaking to English people. It is undoubtedly becoming more widely used within RP.

## Notes on problems and further reading

The description of fricatives is in general quite straightforward. However, something that is mentioned only briefly in section 6.2 is the difference between fricatives in terms of the width and depth of the air passage. The terms slit and groove are sometimes used: the air passage in s and z is said to be grooved and that in ʃ and ʒ slit; see Gimson (1989), 8.4.4, and 8.4.5; O'Connor (1973), pp. 48 and 142.

The dental fricative ð is something of a problem: although there are not many English words in which this sound appears, those words are ones which occur very frequently – words like 'the', 'this', 'there', 'that', and so on. In my experience this consonant often shows so little friction noise that on purely phonetic grounds it seems incorrect to class it as a fricative. It is more like a weak (lenis) dental plosive. This matter is discussed again in Chapter 14, section 14.2.

On the phonological side, I have brought in a discussion of the phonemic analysis of two "marginal" fricatives which present a problem (though not a particularly important or fundamental one): I feel that this is worth discussing in that it gives a good idea of the sort of problem that can arise in analysing the phonemic system of a language. The other problem area is the glottalisation described at the end of the chapter. There is, I think, now a growing awareness of how frequently this is to be found in the speech of younger RP speakers; however, it is not at all easy to formulate rules stating the contexts in which this occurs. There is discussion in Brown (1990), pp. 28–30, in Gimson (1989), 8.2.3 (3) and 8.2.7 and in Wells (1982), 3.4.5. I have tried to analyse the very complex distribution of glottalisation myself (Roach, 1973)\* and to measure the timing of articulatory events in glottalised consonants (Roach, 1979).

\*If you do read this paper, please note that the two rules given on p. 13 were printed in the wrong order.



## Notes for teachers

Although it is important to be aware of the ways in which fricatives differ from each other, I have never found it helpful to teach learners to aim consciously at slit and groove articulations – it is not something that most people feel they have control over, so simple imitation works better.

Although I do not recommend teaching learners to produce glottalisation of p, t, k, tʃ, I have sometimes found advanced learners have been able to “get the hang of it”, and I find the increase in naturalness in their accent very striking.

## Written exercises

1. Transcribe the following words phonemically:
 

a) fishes	e) achieves
b) shaver	f) others
c) sixth	g) measure
d) these	h) ahead
2. Following the style introduced in Exercise 1 for Chapter 4, describe the movements of the articulators in the first word of the above list.

## 7 Nasals and other consonants

So far we have studied two major groups of consonants, the plosives and fricatives, and also the affricates, tʃ and dʒ, a total of seventeen. There remain the nasals m, n, ŋ and four others, l, r, w and j, which are not easy to fit into groups. All of these consonants are continuants and usually have no friction noise, but in other ways they are very different from each other.

### 7.1 Nasals

The basic characteristic of a nasal consonant is that the air escapes through the nose. For this to happen, the soft palate must be lowered; in the case of all the other consonants and vowels, the soft palate is raised and air cannot pass through the nose. In nasal consonants, however, the air does not pass through the mouth; it is prevented by a complete closure in the mouth at some point. If you produce a long sequence dndndndndndndn without moving your tongue from the position for alveolar closure, you will feel your soft palate moving up and down. The three types of closure are: bilabial (lips), alveolar (tongue blade against alveolar ridge) and velar (back of tongue against the soft palate). This set of places produces three nasal consonants, m, n, ŋ, which correspond to the three places of articulation for the pairs of plosives p b, t d, k g.

m and n are simple, straightforward consonants with distributions like those of the plosives. There is in fact little to describe. However, ŋ is a different matter. It is a sound that gives considerable problems to foreign learners, and one that is so unusual in its phonological aspect that some people argue that it is not one of the phonemes of English at all. The place of articulation of ŋ is the same as that of k, g; it is a useful exercise to practise making a continuous ŋ sound. If you do this, it is very important not to produce a k or g at the end – pronounce the ŋ just like m or n.



TU 7, Exs  
1 & 2

We will now look at some ways in which the distribution of ŋ is unusual.

i) In initial position we find m and n occurring freely, but ŋ never

occurs in this position. With the possible exception of ʒ, this makes ŋ the only English consonant that cannot occur initially.

- ii) Medially, ŋ occurs quite frequently, but there is in RP a rather complex and quite interesting rule concerning the question of when ŋ may be pronounced without a following plosive. When we find the letters 'nk' in the middle of a word in its orthographic form, a k will always be pronounced; however, some words with orthographic 'ng' in the middle will have a pronunciation containing ŋg and others will have ŋ without g. For example, in RP we find the following:

A	B
'finger' fɪŋgə	'singer' sɪŋə
'anger' æŋgə	'hanger' hæŋə

In the words of column A the ŋ is followed by g, while the words of column B have no g. What is the difference between A and B? The important difference is in the way the words are constructed – their morphology. The words of column B can be divided into two grammatical pieces: 'sing' + '-er', 'hang' + '-er'. These pieces are called morphemes, and we say that column B words are morphologically different from column A words, since these can *not* be divided into two morphemes. 'Finger' and 'anger' consist of just one morpheme each.

We can summarise the position so far by saying that (within a word containing the letters 'ng' in the spelling) ŋ occurs without a following g if it occurs at the end of a morpheme; if it occurs in the middle of a morpheme it has a following g.

Let us now look at the ends of words *ending* orthographically with 'ng'. We find that these always end with ŋ; this ŋ is never followed by a g. Thus we find that the words 'sing' and 'hang' are pronounced as sɪŋ and hæŋ; to give a few more examples, 'song' is sɒŋ, 'bang' is bæŋ and 'long' is lɒŋ. We do not need a separate explanation for this: the rule given above, the g is not pronounced after ŋ at the end of a morpheme, works in these cases too, since the end of a word must also be the end of a morpheme. (If this point seems difficult, think of the comparable case of words and sentences: a sound that comes at the end of a sentence must necessarily also come at the end of a word, so that the final k of 'This is a book' is also the final k of the word 'book'.)

Unfortunately, rules tend to have exceptions. The main exception to the above morpheme-based rule concerns the comparative and superlative suffixes '-er' and '-est'. According to the rule given above, the adjective 'long' will be pronounced lɒŋ, which is correct. It would also predict correctly that if we add another morpheme to 'long', such as the suffix '-ish', the pronunciation of ŋ would again

be without a following *g*. However, it would additionally predict that the comparative and superlative forms 'longer' and 'longest' would be pronounced with no *g* following the *ŋ*, while in fact the correct pronunciation of the words is:

'longer' *lɒŋə*      'longest' *lɒŋgəst* (or *lɒŋgɪst*)

As a result of this, the rule must be modified; it must state that comparative and superlative forms of adjectives are to be treated as single-morpheme words for the purposes of this rule. The resulting rule is, of course, difficult to understand. It is important to remember that English speakers in general (apart from those trained in phonetics) are quite ignorant of this rule, and yet if a foreigner uses the wrong pronunciation (that is, pronounces *ŋg* where *ŋ* should occur, or *ŋ* where *ŋg* should be used), they notice that a mispronunciation has occurred.

- iii) A third way in which the distribution of *ŋ* is unusual is the small number of vowels it is found to follow. It never occurs after a diphthong or long vowel, and in fact there are only five vowels ever found preceding this consonant: *i*, *e*, *æ*, *ʌ* and *ɒ*.

The velar nasal consonant *ŋ* is, in summary, phonetically simple (it is no more difficult to produce than *m* or *n*) but phonologically complex (it is, as we have shown, not easy to describe the contexts in which it occurs).

## 7.2 l



TU 7,  
Ex 3

A lateral consonant is one in which the passage of air through the mouth does not go in the usual way along the centre of the tongue; instead, there is complete closure between the centre of the tongue and the part of the roof of the mouth where contact is to be made (the alveolar ridge in the case of *l*). Because of this complete closure along the centre, the only way for the air to escape is along the sides of the tongue. If you make a long *l* sound you may be able to feel that the sides of your tongue are pulled in and down while the centre is raised, but it is not easy to become consciously aware of this; what is more revealing (if you can do it) is to produce a long sequence of alternations between *d* and *l* without any intervening vowel. If you produce *dldldldldldldl* without moving the middle of the tongue, you will be able to feel the movement of the sides of the tongue that is necessary for the production of a lateral. It is also possible to see this movement in a mirror if you open your lips wide as you produce it. Finally, it is also helpful to see if

you can *feel* the movement of air past the sides of the tongue; this is not really possible in a voiced sound (the obstruction caused by the vibrating vocal folds reduces the airflow), but if you try to make a very loud *whispered* l, you should be able to feel the air rushing along the sides of your tongue.

We find l initially, medially and finally, and its distribution is therefore not particularly limited. In RP, the consonant has one unusual characteristic: the realisation of l found before vowels sounds quite different from that found in other contexts. For example, the realisation of l in the word 'lea' li: is quite different from that in 'eel' i:l. The sound in i:l is what we call a "dark l"; it has a quality rather similar to an [u] vowel, with the back of the tongue raised. The sound in li: is what is called a "clear l"; it resembles an [i] vowel, with the front of the tongue raised. The "dark l" is also found when it precedes a consonant, as in 'eels' i:lz. We can therefore predict which realisation of l (clear or dark) will occur in a particular context: clear l will never occur before consonants or before a pause, but only before vowels; dark l never occurs before vowels. We can say, using terminology introduced in Chapter 5, that clear l and dark l are allophones of the phoneme l in complementary distribution. Most English speakers do not consciously know about the difference between clear and dark l, yet they are quick to detect the difference when they hear English speakers with different accents or foreign learners who have not learned the correct pronunciation.

Another allophone of l is found when it follows p or k at the beginning of a stressed syllable. The l is then devoiced, i.e. produced without the voicing found in most realisations of this phoneme. The situation is (as explained in Chapter 4) similar to aspiration when a vowel follows p, t or k in a stressed syllable; the first part of the vowel is devoiced.

### 7.3 r



TU 7,  
Ex 4

This consonant is important in that considerable differences in its articulation and its distribution are found in different accents of English. As far as the articulation of the sound is concerned, there is really only one pronunciation that can be recommended to the foreign learner of RP, and that is what is called a **post-alveolar approximant**. An approximant, as a type of consonant, is rather difficult to describe; informally, we can say that it is an articulation in which the articulators approach each other but do not get sufficiently close to each other to produce a "complete" consonant such as a plosive, nasal or fricative.

The difficulty with this is that articulators are always in *some* positional relationship with each other, and any vowel articulation could also be classed as an approximant – but the term “approximant” is usually used only for consonants.

The important thing about the articulation of *r* is that the tip of the tongue approaches the alveolar area in approximately the way it would for a *t* or *d*, but never actually makes contact with any part of the roof of the mouth. You should be able to make a long *r* sound and feel that no part of the tongue is in contact with the roof of the mouth at any time. (This is, of course, very different from the “*r*-sounds” of many other languages where some kind of tongue–palate contact is made.) The tongue is in fact usually slightly curled backwards with the tip raised; consonants with this tongue shape are usually called *retroflex*. If you pronounce an alternating sequence of *d* and *r* (*drdrdrdrdrdr*) while looking in a mirror you should be able to see more of the underside of the tongue in the *r* than in the *d*, where the tongue tip is not raised and the tongue is not curled back. The “curling-back” process usually carries the tip of the tongue to a position slightly further back in the mouth than that for alveolar consonants such as *t* and *d*, which is why this approximant is called “post-alveolar”. A rather different *r* sound is found at the beginning of a syllable if it is preceded by *p*, *t* or *k*; it is then voiceless and slightly fricative. This pronunciation is found in words such as ‘press’, ‘tress’, ‘cress’.

One final characteristic of the articulation of *r* is that it is usual for the lips to be slightly rounded; foreign learners should do this but should be careful not to exaggerate it. If the lip-rounding is too strong the consonant will sound too much like *w*, which is the sound that most English children produce until they have learned to pronounce *r* in the adult way.

The distributional peculiarity of *r* in RP is very easy to state: this phoneme only occurs before vowels. No one has any difficulty in remembering this rule, but foreign learners (most of whom, quite reasonably, expect that if there is a letter ‘*r*’ in the spelling then a *r* should be pronounced) find it difficult to apply the rule to their own pronunciation. There is no problem with words like the following:

- i) ‘red’ *red*      ‘arrive’ *əraɪv*      ‘hearing’ *hɪərɪŋ*

In these words *r* is followed by a vowel. But in the following words there is no *r* in the pronunciation:

- ii) ‘car’ *kɑ:*      ‘ever’ *evə*      ‘here’ *hɪə*  
 iii) ‘hard’ *hɑ:d*      ‘verse’ *vɜ:s*      ‘cares’ *keəz*

Many accents of English *do* pronounce *r* in words like those of (ii) and (iii) (for example, most American, Scots and West of England accents); accents which have *r* in final position (before a pause) and before a

consonant are called *rhotic* accents, while accents in which *r* only occurs before vowels (such as RP) are called *non-rhotic*.

## 7.4 j and w



TU 7,  
Ex 5

These are the consonants found at the beginning of words such as 'yet' and 'wet'. They have been called semivowels by many writers, but we will use the more modern term "approximant" (introduced in 7.3 above). The most important thing to remember about these phonemes is that they are *phonetically* like vowels but *phonologically* like consonants. From the phonetic point of view the articulation of *j* is practically the same as that of a front close vowel such as *i:*, but is very short. In the same way *w* is closely similar to *u:*. If you make the initial sound of 'wet' or 'yet' very long, you will be able to hear this. But despite this vowel-like character, we use them like consonants. For example, they only occur before vowel phonemes; this is a typically consonantal distribution. We can show that a word beginning with *w* or *j* is regarded as beginning with a consonant in the following way: the indefinite article is 'a' before a consonant (as in 'a cat', 'a dog'), and 'an' before a vowel (as in 'an apple', 'an orange'). If a word beginning with *w* or *j* is preceded by the indefinite article, it is the 'a' form that is found (as in 'a way', 'a year'). Another example is that of the definite article. Here the rule is that 'the' is pronounced as *ðə* before consonants (as in *ðə kæt*, *ðə dɒg*) and as *ði* before vowels (as in *ði æpl*, *ði ɒrɪndʒ*). This evidence illustrates why it is said that *j* and *w* are phonologically consonants. However, it is important to remember that to pronounce them as fricatives (as many foreign learners do), or even affricates, is a mispronunciation. Only in special contexts do we hear friction noise in *j* or *w*: this is when they are preceded by *p*, *t* or *k* at the beginning of a syllable, as in these words:

'pure' <i>pjʊə</i>	(no words begin with <i>pw</i> )
'tune' <i>tju:n</i>	'twin' <i>twɪn</i>
'queue' <i>kju:</i>	'quin' <i>kwɪn</i>

The *j* and *w* sounds are devoiced (that is, become voiceless) and are slightly fricative in these contexts. For place of articulation, we regard *j* as palatal and *w* as bilabial.

This completes our examination of the consonant phonemes of English. It is useful to place them on a consonant chart, and this is done in Table 2. On this chart, the different places of articulation are arranged from left to right and the manners of articulation are arranged from top to bottom. When there is a pair of phonemes with the same

Table 2. *Chart of English consonant phonemes*

	Place of articulation							
	Bilabial	Labiodental	Dental	Alveolar	Palato-alveolar (Post-alveolar)	Palatal	Velar	Glottal
Plosive	p b			t d			k g	
Fricative		f v	θ ð	s z	ʃ ʒ			h
Affricate					tʃ dʒ			
Nasal	m			n			ŋ	
Lateral				l				
Approximant	w				r		j	

*Manner of articulation*



place and manner of articulation but differing in whether they are fortis or lenis (voiceless or voiced), the symbol for the fortis consonant is placed to the left of the symbol for the lenis consonant.

## Notes on problems and further reading

The notes for this chapter are devoted to giving further detail on a particularly difficult theoretical problem. The argument that  $\eta$  is an allophone of  $n$ , not a phoneme in its own right, is so widely accepted by contemporary phonological theorists that few seem to feel it worthwhile to explain it fully. Since the velar nasal is introduced in this chapter, I have chosen to attempt this here. However, it is a rather complex theoretical matter, and you may prefer to leave consideration of it until after the discussion of problems of phonemic analysis in Chapter 13.

A quite interesting examination of the question was written by Vachek (1964). There are brief discussions of the phonemic status of  $\eta$  in Chomsky and Halle (1968), p. 85, Hyman (1975), pp. 74–6 and Ladefoged (1982), p. 60; the fullest treatment in recent years is Wells (1982), pp. 60–4.

Everyone agrees that English has at least two contrasting nasal phonemes,  $m$  and  $n$ . However, there is disagreement about whether there is a third nasal phoneme in RP. In favour of accepting  $\eta$  as a phoneme is the fact that traditional phoneme theory more or less demands its acceptance despite the general tendency to make phoneme inventories as small as possible. Consider minimal pairs like these: 'sin'  $s\eta n$  – 'sing'  $s\eta \eta$ ; 'sinner'  $s\eta n\theta$  – 'singer'  $s\eta \eta\theta$ .

There are three main arguments *against* accepting  $\eta$  as a phoneme:

- i) In some English accents it can easily be shown that  $\eta$  is an allophone of  $n$ , which suggests that something similar might be true of RP too.
- ii) If  $\eta$  is a phoneme, its distribution is very different from that of  $m$  and  $n$ , being restricted to syllable-final position (phonologically) and to morpheme-final position (morphologically) unless it is followed by  $k$  or  $g$ .
- iii) English speakers with no phonetic training are said to feel that  $\eta$  is not a 'single sound' like  $m$  and  $n$ . Sapir (1925) said that 'no native speaker of English could be made to feel in his bones' that  $\eta$  formed part of a series with  $m$  and  $n$ . This is, of course, very hard to establish, if not impossible.

We need to look at point (i) in more detail and go on to see how this

leads to the argument against having  $\eta$  as a phoneme. Please note that I am not trying to argue that this proposal is correct; my aim is just to explain the argument. The whole question may seem of little or no practical consequence, but we ought to be interested in any phonological problem if it appears that conventional phoneme theory is not able to deal satisfactorily with it.

In some English accents, particularly those of the Midlands,  $\eta$  is only found in front of  $k$  and  $g$ . For example:

'sink'	sɪŋk	'singer'	sɪŋgə
'sing'	sɪŋg	'singing'	sɪŋɪŋg

(This was my own pronunciation as a boy, living in the West Midlands, but I now usually have RP sɪŋk, sɪŋ, sɪŋə, sɪŋɪŋ.)

In the case of an accent like this, it can be shown that within the morpheme the only nasal that occurs before  $k$  and  $g$  is  $\eta$ . Neither  $m$  nor  $n$  can occur in this environment. Thus within the morpheme  $\eta$  is in complementary distribution with  $m$  and  $n$ . Since  $m$  and  $n$  are already established as distinct English phonemes in other contexts (mæp, næp, etc.), it is clear that for such non-RP accents  $\eta$  must be an allophone of one of the other nasal consonant phonemes. We choose  $n$  because when a morpheme-final  $n$  is followed by a morpheme-initial  $k$  or  $g$  it is usual for that  $n$  to change to  $\eta$ ; however, a morpheme-final  $m$  followed by a morpheme-initial  $k$  or  $g$  usually *doesn't* change to  $\eta$ . Thus:

'rain-coat' reɪŋkəʊt BUT 'tram-car' træmkɑː

So in an analysis which contains no  $\eta$  phoneme, we would transcribe 'rain-coat' phonemically as reɪnkəʊt and 'sing', 'singer', 'singing' as sɪŋg, sɪŋgə, sɪŋɪŋg. The phonetic realisation of the  $n$  phoneme as a velar nasal will be accounted for by a general rule that we will call Rule 1:

**Rule 1:**  $n$  is realised as  $[\eta]$  when it occurs in an environment in which it precedes either  $k$  or  $g$ .

Let us now look at RP. When we see words like sɪŋ, sɪŋə, sɪŋɪŋ, we can see no  $k$  or  $g$  that could have caused the above rule to apply. However, we must look at one important fact: the word 'finger' is pronounced in RP as fɪŋgə. What is the reason for the difference between 'singer' sɪŋə and 'finger' fɪŋgə? The crucial difference is that 'finger' is a single, indivisible morpheme whereas 'singer' is composed of two morphemes, 'sing' and '-er'. When  $\eta$  occurs without a following  $k$  or  $g$  it is *always* immediately before a morpheme boundary. Consequently, the sound  $\eta$  and the sequence  $\eta g$  are in complementary distribution in RP. But within the morpheme there is no contrast between the sequence  $\eta g$  and the sequence  $ng$ , which makes it possible to say that  $\eta$  is also in complementary distribution with the sequence  $ng$ .

After establishing these 'background facts', we can go on to state the argument as follows:

- i) English has only *m* and *n* as nasal phonemes.
- ii) The sound *ŋ* is an allophone of the phoneme *n*.
- iii) The words 'finger', 'sing', 'singer', 'singing' should be represented phonemically as *fɪŋə*, *sɪŋ*, *sɪŋə*, *sɪŋɪŋ*.
- iv) Rule 1 (see above) applies to all these phonemic representations to give these phonetic forms: *fɪŋgə*, *sɪŋ*, *sɪŋgə*, *sɪŋɪŋg*.
- v) A further rule (Rule 2) must now be introduced:

**Rule 2:** *g* is deleted when it occurs after *ŋ* and before a morpheme boundary.

It should be clear that Rule 2 will not apply to 'finger' because the *ŋ* is not immediately followed by a morpheme boundary, but the rule does apply to all the others, hence the final phonetic forms: *fɪŋgə*, *sɪŋ*, *sɪŋə*, *sɪŋɪŋ*.

- vi) Now we have to deal with an exception: comparative and superlative forms of adjectives ending in *ŋ* contain the sequence *ŋg*, e.g. 'long' *lɒŋ*, 'longer' (comparative) *lɒŋgə*, 'longest' (superlative) *lɒŋgɪst*. In fact there is a minimal pair in RP comprising 'longer' (= a person who longs) *lɒŋə* and 'longer' (comparative of 'long') *lɒŋgə*. Most generative phonologists would 'solve' this problem by saying that there is a *different* morpheme boundary found in the comparative and superlative forms, and that Rule 2 would have to be altered so as to exclude this particular type of morpheme boundary from its influence. An alternative is to say that the words 'longer', 'longest', 'stronger', 'strongest', etc. are specifically exempted from Rule 2. Both solutions are, of course, very '*ad hoc*' – that is, thought up just to explain away one particular problem.

The argument against treating *ŋ* as a phoneme may not appeal to you very much. The important point, however, is that if one is prepared to use the kind of complexity and abstractness illustrated above, one can produce quite far-reaching changes in the phonemic analysis of a language.

The other consonants, *l*, *r*, *w* and *j* do not, I think, need further explanation, except to mention that the question of whether *j*, *w* are consonants or vowels is discussed in O'Connor and Trim (1953).

## Written exercises

1. List all the consonant phonemes of RP, grouped according to manner of articulation.
2. Transcribe the following words phonemically:
  - a) sofa
  - b) verse
  - c) steering
  - d) breadcrumb
  - e) square
  - f) anger
  - g) bought
  - h) nineteen
3. When the vocal tract is in its resting position for normal breathing, the soft palate is usually lowered. Describe what movements are carried out by the soft palate in the pronunciation of the following items:
  - a) banner
  - b) mid
  - c) angle

## 9 Strong and weak syllables

### 9.1 Strong and weak

One of the most noticeable features of English is that many syllables are **weak**; this is true of many other languages, but it is necessary to study how these weak syllables are pronounced and where they occur in English. The distribution of strong and weak syllables is a subject that will be met in several later chapters. For example, we will look later at **stress**, which is a major factor in determining whether a syllable will be strong or weak. **Elision** is a closely related subject, and in considering intonation the difference between strong and weak syllables is also important. Finally, words with “strong” and “weak” forms are clearly a related matter. In this chapter we look at the general nature of weak syllables.

What do we mean by “strong” and “weak”? In the present context, we are using these terms to refer to phonetic characteristics of syllables. We could describe them partly in terms of stress (by saying, for example, that strong syllables are stressed and weak syllables unstressed), but until we describe what “stress” *means* such a description would not be very useful. The most important thing to note at present is that any strong syllable will have as its peak one of the vowel phonemes (or possibly a triphthong) listed in Chapter 3, but not ə. Weak syllables, on the other hand, as they are being defined here, can only have four types of peak:

- i) the vowel ə (“schwa”)
- ii) a close front unrounded vowel in the general area of i: and ɪ
- iii) a close back rounded vowel in the general area of u: and ʊ
- iv) a syllabic consonant.

When we compare weak syllables containing vowels with strong syllables, we find the vowel in a weak syllable tends to be shorter, of lower intensity and different in quality. For example, in the word ‘father’ fɑ:ðə the second syllable, which is weak, is shorter than the first, is less loud and has a vowel that cannot occur in strong syllables. In a word like ‘bottle’ bɒtəl the weak second syllable contains no vowel at all, but consists entirely of the consonant l. We call this a **syllabic consonant**. In the rest of this chapter we will look at the different types of weak syllable in more detail.

## 9.2 The ə vowel ("schwa")



TU 9,

Ex 1

The most frequently occurring vowel in English is ə, which is always associated with weak syllables. In quality it is mid (that is, half-way between close and open) and central (that is, half-way between front and back). It is generally described as lax, that is, not articulated with much energy. Of course, the quality of this vowel is not always the same, but the variation is not important.

Not all weak syllables contain ə, though many do. Learners of English need to learn where ə is appropriate and where it is not. To do this we often have to use information that traditional phonemic theory would not accept as relevant – we must consider spelling. The question to ask is: if the speaker were to pronounce a particular weak syllable as strong instead, which vowel would it be most likely to have, according to the usual rules of English spelling? Of course, knowing this will not tell us which syllables in a word or utterance should be weak – that is something we look at in later chapters – but it will give us a rough guide to the correct pronunciation of weak syllables. Let us look at some examples:

- i) Spelt with 'a'; strong pronunciation would have æ  
     'attend' ətend      'character' kærəktə  
     'barracks' bæɾəks
- ii) Spelt with 'ar'; strong pronunciation would have ɑ:  
     'particular' pətɪkjələ      'molar' məʊlə  
     'monarchy' monəki
- iii) Adjectival endings spelt 'ate'; strong pronunciation would have eɪ  
     'intimate' ɪntɪmət      'accurate' ækjərət  
     'desolate' desələt (though there are exceptions to this:  
     'private' is usually praɪvət)
- iv) Spelt with 'o'; strong pronunciation would have ɒ  
     'tomorrow' təmərəʊ      'potato' pətetəʊ  
     'carrot' kærət
- v) Spelt with 'or'; strong pronunciation would have ɔ:  
     'forget' fəget      'ambassador' æmbæsədə  
     'opportunity' ɒpətju:nɪti
- vi) Spelt with 'e'; strong pronunciation would have e  
     'settlement' setlmənt      'violet' vaɪələt  
     'postmen' pəʊstmən
- vii) Spelt with 'er'; strong pronunciation would have ɜ:  
     'perhaps' pəhæps      'stronger' strɒŋgə  
     'superman' su:pəmæn
- viii) Spelt with 'u'; strong pronunciation would have ʌ  
     'Autumn' ɔ:təm      'support' səpɔ:t  
     'halibut' həlɪbət

- ix) Spelt with 'ough' (there are, of course, many other pronunciations for the letter-sequence 'ough')  
       'thorough' θʌrə      'borough' bʌrə
- x) Spelt with 'ous'  
       'gracious' greɪʃəs      'callous' kæləs

### 9.3 Close front and close back vowels

Two other vowels are commonly found in weak syllables, one close front (in the general region of i: and ɪ) and the other close back rounded (in the general region of u: and ʊ). In strong syllables it is comparatively easy to distinguish i: from ɪ, u: from ʊ, but in weak syllables the difference is not so clear. For example, although it is easy enough to decide which vowel one hears in 'beat' or 'bit', it is much less easy to decide which vowel one hears in the second syllable of words such as, for example, 'easy' or 'busy'. There are accents of English (for example Welsh accents) in which the second syllable sounds most like the i: in the first syllable of 'easy', and others (for example Yorkshire accents) in which it sounds more like the ɪ in the first syllable of 'busy'. In present-day RP, however, the matter is not so clear. There is uncertainty, too, about the corresponding close back rounded vowels. If we look at the words 'good to eat' and 'food to eat', we must ask if the word 'to' is pronounced with the ʊ vowel phoneme of 'good' or the u: phoneme of 'food'. Again, which vowel comes in 'to' in 'I want to'?

One common feature is that the vowels in question are more like i: or u: when they precede another vowel, less so when they precede a consonant or pause. You should notice one further thing: with the exception of one or two very artificial examples, there is really no possibility in these contexts of contrast between i: and ɪ, or between u: and ʊ. Effectively, then, the two distinctions, which undoubtedly exist within strong syllables, are neutralised in RP. How should we transcribe the words 'easy' and 'busy' as pronounced in RP? We will use the close front unrounded case as an example, since it is more straightforward. The possibilities, using our phoneme symbols, are the following:

- |     |        |        |
|-----|--------|--------|
|     | 'easy' | 'busy' |
| i)  | i:zi:  | bɪzi:  |
| ii) | i:zɪ   | bɪzɪ   |

Few speakers of RP seem to feel satisfied with any of these transcriptions. There is a possible solution to this problem, but it goes against standard phoneme theory. We can symbolise this weak vowel as ɪ, that is, using the symbol for the vowel in 'beat' but without the length-mark. Thus:

izi      bɪzi

The *i* vowel is neither the *i:* of 'bear' nor the *ɪ* of 'bit', and is not in contrast with them. We can set up a corresponding vowel *ʊ* that is neither the *u:* of 'shoe' nor the *ʊ* of 'book' but a weak vowel that shares the characteristics of both. If we use *i* and *ʊ* in our transcription as well as *i:*, *ɪ*, *u:* and *ʊ*, it is no longer a true phonemic transcription in the traditional sense. However, this need not be too serious an objection, and the fact that native speakers seem to think that this transcription fits better with their feelings about the language is a good argument in its favour.



TU 9,

Ex 2

Let us now look at where these vowels are found, beginning with close front unrounded ones. We find *i* occurring:

- i) In word-final position in words spelt with final 'y' or 'ey' (after one or more consonant letters), e.g. 'happy' *hæpi*, 'valley' *væli*, and in morpheme-final position when such words have suffixes beginning with vowels, e.g. 'happier' *hæpiə*, 'easiest' *i:ziəst*, 'hurrying' *hʌriŋ*.
- ii) In a prefix such as those spelt 're', 'pre', 'de' if it precedes a vowel and is unstressed, for example in 'react' *riækt*, 'preoccupied' *prɪɔkjupaɪd*, 'deactivate' *diæktɪvɪt*.
- iii) In the suffixes spelt 'iate', 'ious' when they have two syllables, for example in 'appreciate' *əpri:ʃiət*, 'hilarious' *hɪləəriəs*.
- iv) In the following words when unstressed: 'he', 'she', 'we', 'me', 'be' and the word 'the' when it precedes a vowel.

In most other cases of weak syllables containing a close front unrounded vowel we can assign the vowel to the *ɪ* phoneme, as in the first syllable of 'resist' *ri:zɪst*, 'inane' *ɪneɪn*, 'enough' *ɪnʌf*, the middle syllable of 'incident' *ɪnsɪdənt*, 'orchestra' *ɔ:kɪstrə*, 'artichoke' *ɑ:tɪʃəʊk*, and the final syllable of 'swimming' *swɪmɪŋ*, 'liquid' *lɪkwɪd*, 'optic' *ɒptɪk*. It can be seen that this vowel is most often represented in spelling by the letters 'i' and 'e'.

Weak syllables with close back rounded vowels are not so commonly found. We find *ʊ* most frequently in the words 'you', 'to', 'into', 'do', when they are unstressed and are not immediately preceding a consonant, and 'through' and 'who' in all positions when they are unstressed. This vowel is also found before another vowel within a word, as in 'evacuation' *ɪvækjuetʃən*, 'influenza' *ɪnfluenzə*.

## 9.4 Syllabic consonants

In the above sections we have looked at vowels in weak syllables. We must also consider syllables in which no vowel is found. In this case, a consonant, either *l*, *r* or a nasal, stands as the centre of the syllable instead



of the vowel. It is usual to indicate that a consonant is syllabic by means of a small vertical mark *ˌ*, for example 'cattle' *kætˌl*.

/



TU 9,  
Ex 3

Syllabic *l* is perhaps the most noticeable example of the English syllabic consonant, though it would be wrong to expect to find it in all accents. It occurs after another consonant, and the way it is produced depends to some extent on the nature of that consonant. If the preceding consonant is alveolar, as in 'bottle' *bɒtˌl*, 'muddle' *mʌdˌl*, 'tunnel' *tʌnˌl*, the articulatory movement from the preceding consonant to the syllabic *l* is quite simple. The sides of the tongue, which are raised for the preceding consonant, are lowered to allow air to escape over them (this is called lateral release). The tip and blade of the tongue do not move until the articulatory contact for the *l* is released. The *l* is a "dark l" (as explained in Chapter 7). In some accents – particularly London ones – we often find a close back rounded vowel instead.

Where do we find syllabic *l* in RP? It is useful to look at the spelling as a guide. The most obvious case is where we have a word ending with one or more consonant letters followed by 'le' (or, in the case of noun plurals or third person singular verb forms, 'les'). Examples are:

- i) with alveolar consonant preceding
  - 'cattle' *kætˌl*      'bottle' *bɒtˌl*
  - 'wrestle' *resˌl*      'muddle' *mʌdˌl*
- ii) with non-alveolar consonant preceding
  - 'couple' *kʌpˌl*      'trouble' *trʌbˌl*
  - 'struggle' *strʌɡˌl*      'knuckle' *nʌkˌl*

Such words usually lose their final letter 'e' when a suffix beginning with a vowel is attached, but the *l* usually remains syllabic. Thus:

'bottle' – 'bottling'	<i>bɒtˌl</i> – <i>bɒtˌlɪŋ</i>
'muddle' – 'muddling'	<i>mʌdˌl</i> – <i>mʌdˌlɪŋ</i>
'struggle' – 'struggling'	<i>strʌɡˌl</i> – <i>strʌɡˌlɪŋ</i>

Similar words not derived in this way do not have the syllabic *l* – it has been pointed out that the two words 'coddling' (derived from the verb 'coddle') and 'codling' (meaning "small cod", derived by adding the diminutive suffix '-ling' to 'cod') show a contrast between syllabic and non-syllabic *l*: 'coddling' *kɒdˌlɪŋ* and 'codling' *kɒdˌlɪŋ*. In the case of words such as 'bottle', 'muddle', 'struggle', which are quite common, it would be a mispronunciation to insert a vowel between the *l* and the preceding consonant. There are a few accents of English which may do this, so that, for example, 'cattle' is pronounced *kætəˌl*, but this is not the case in RP.

We also find syllabic | in words spelt with, at the end, one or more consonant letters followed by 'al' or 'el', for example:

'panel' pæn	'papal' peɪp
'petal' pet	'parcel' pɑːs
'kernel' kɜːn	'Babel' beɪb
'pedal' ped	'ducal' djuːk

In some less common or more technical words, it is not obligatory to pronounce syllabic | and the sequence əl may be used instead, though it is less likely: 'missal' mɪs| or mɪsəl; 'acquittal' əkwɪt| or əkwɪtəl.

*n*



TU 9,

Ex 4

Of the syllabic nasals, the most frequently found and the most important is ŋ. When should it be pronounced? A general rule could be made that weak syllables which are phonologically composed of a plosive or fricative consonant plus ən are uncommon except in initial position in the words. So we can find words like 'tonight' tənɑɪt, 'canary' kənəəri with an ə before n, but medially and finally, as in words like 'threaten', 'threatening', we find much more commonly a syllabic ŋ: θretn̩, θretn̩ɪŋ. To pronounce a vowel before the nasal consonant would sound strange (or at best overcareful) in RP. Syllabic ŋ is most common after alveolar plosives and fricatives; in the case of t and d followed by ŋ the plosive is nasally released by lowering the soft palate, so that in the word 'eaten' iːtn̩, for example, the tongue does not move in the tŋ sequence but the soft palate is lowered at the end of t so that compressed air escapes through the nose. We do not find ŋ after l or tʃ, dʒ, so that for example 'sullen' must be pronounced sʌlən, 'Christian' as krɪstʃən (though this word may be pronounced with t plus i or j instead of tʃ) and 'pigeon' as pɪdʒən.

Syllabic ŋ after non-alveolar consonants is not so widespread. In words where the syllable following a velar consonant is spelt 'an' or 'on' (for example, 'toboggan', 'wagon') it is rarely heard, the more usual pronunciation being təbɒgən, wægən. After bilabial consonants, in words like 'happen', 'happening', 'ribbon' we can consider it equally acceptable to pronounce them with syllabic ŋ (hæpŋ, hæpŋɪŋ, rɪbŋ) or with ən (hæpən, hæpənɪŋ, rɪbən). As we will see, syllabic ŋ is also possible in this context. In a similar way, after velar consonants in words like 'thicken', 'waken', syllabic ŋ is possible but ən is also acceptable. Syllabic velar nasal ŋ is also possible in this context.

After f or v, syllabic ŋ is more common than ən (except, as with the other cases described, in word-initial syllables). Thus 'seven', 'heaven', 'often' are more usually sevŋ, hevŋ, ɒfŋ than sevən, hevən, ɒfən.

In all the examples given so far the syllabic ŋ has been following

another consonant; sometimes it is possible for another consonant to precede that consonant, but in this case a syllabic consonant is less likely to occur. If *l* is followed by a plosive, as in 'Wilton', the pronunciation *wɪltŋ* is possible, but *wɪltən* is also found regularly. If *s* precedes, as in 'Boston', a final syllabic nasal is less frequent, while clusters formed by nasal + plosive + syllabic nasal are very unusual: thus 'Minton', 'lantern', 'London', 'abandon' will normally have *ə* in the last syllable and be pronounced *mintən*, *læntən*, *lɒndən*, *əbəndən*. Other nasals also discourage a following plosive plus syllabic nasal, so that for example 'Camden' is normally pronounced *kæmdən*.

### *m, ŋ*

We will not spend much time on the syllabic pronunciation of these consonants. Both *ɾ* and *n* occur as syllabic, but only as a result of processes such as assimilation and elision that I have not yet described. We find them sometimes in words like 'happen', which can be pronounced *hæpɱ*, though *hæpŋ* and *hæpən* are equally acceptable, and 'uppermost', which could be pronounced as *ʌpɱəʊst* though *ʌpəməʊst* would be more usual. Examples of possible syllabic velar nasals would be 'thicken' *θɪkŋ* (where *θɪkən* and *θɪkŋ* are also possible), and 'broken key' *brəʊkŋ kiː*, where the nasal consonant occurs between velar consonants (again, *ŋ* or *ən* could be substituted for *ŋ*).

A note about symbols: the usual convention for the syllabic mark is that it should be placed below symbols that do not come below the line, for example *ɱ*, *ŋ* but above a symbol that does come below the line, for example *ŋ̩*. In this course, however, it is felt preferable to put the mark underneath the symbol in all cases of syllabic consonants.

### *r*

In many accents of the type called "rhotic" (as explained in Chapter 7), such as most American accents, syllabic *r* is very common. The word 'particular', for example, would probably be pronounced *pɑːtɪkjəlɹ̩* by most Americans, while RP speakers would pronounce this word *pɑːtɪkjələ*. Syllabic *r* is less common in RP and in most cases where it occurs there are perfectly acceptable alternative pronunciations without the syllabic consonant. Here are some examples:

a) where non-syllabic *r* is also acceptable

'history' *hɪstɹi* or *hɪstri* (not usually *hɪstəri*)

'wanderer' *wɒndɹə* or *wɒndrə* (not usually *wɒndərə*)

b) where *ər* is also acceptable

‘buttering’ *bʌtɪŋ* or *bʌtən* (not usually *bʌtɪŋ*)

‘flattery’ *flætrɪ* or *flætəri* (not usually *flætri*)

It seems that type (a) concerns cases where more than one consonant precedes the weak syllable in question, and type (b) where there is only one consonant preceding. There are a few pairs of words (minimal pairs) in which a difference in meaning appears to depend on whether a particular *r* is syllabic or not, for example:

‘Hungary’ *hʌŋgri*      ‘hungry’ *hʌŋgri*  
 ‘adulterous’ *ədʌltrəs*      ‘adultress’ *ədʌltrəs*

But we find no case of syllabic *r* where it would not be possible to substitute either non-syllabic *r* (type a) or *ər* (type b); in the examples above, ‘Hungary’ could equally well be pronounced *hʌŋgəri* and ‘adulterous’ as *ədʌltərəs*.

### *Combinations of syllabic consonants*

It is not unusual to find two syllabic consonants together. Examples are: ‘national’ *næʃnəl* ‘literal’ *lɪtrəl* ‘visionary’ *vɪʒnəri* ‘veteran’ *vetrən*. It is important to remember that it is often not possible to say with certainty whether a speaker has pronounced a syllabic consonant, a non-syllabic consonant or a non-syllabic consonant plus *ə*. For example, the word ‘veteran’ given above could be pronounced in other ways than *vetrən*. An RP speaker might instead say *vetrən*, *vetərən* or *vetərən*. The transcription makes it look as if the difference between these words was clear; it is not. In examining colloquial English it is often more or less a matter of arbitrary choice how one transcribes such a word. Transcription has the unfortunate tendency to make things seem simpler and more clear-cut than they really are.

## **Notes on problems and further reading**

- 9.1 I have at this point tried to bring in some preliminary notions of stress and prominence without giving a full explanation; by this stage in the course it is important to be getting familiar with the difference between stressed and unstressed syllables, and the nature of “schwa”, but the subject of stress is such a large one that I have felt it best to leave its main treatment until later.
- 9.2 On the subject of schwa, see Jones (1975), sections 355–72; Gimson (1989), 7.9.12.

- 9.3 The introduction of *i* and *u* is an idea that not everyone agrees with, but its acceptance as a convention in two influential dictionaries (the *Longman Dictionary of Contemporary English* and the *Longman Pronunciation Dictionary*) gives substantial support. Since I mention native speakers' feelings in this connection, and since I am elsewhere rather sceptical about appeals to native speakers' feelings, I had better explain that in this case my evidence comes from the native speakers of English I have taught in practical classes on transcription over many years. A substantial number of these students have either been speakers of RP or had accents only slightly different from it, and their usual reaction to being told to use *ɪ* for the vowel at the end of 'easy', 'busy' has been one of puzzlement and frustration; like them, I cannot equate this vowel with the vowel of 'bit'. I am, however, reluctant to use *i:*, which suggests a stronger vowel than should be pronounced (like the final vowel in 'evacuee', 'Tennessee'). For some time, I told students that since *ɪ* and *i:* were equally unsuitable for this vowel in the context in question, I would accept either in a transcription. This, not unnaturally, led to further confusion on the students' part, and the treatment suggested here was adopted as the solution that fitted best with what the students felt they wanted to write. I must emphasise that the vowels *i* and *u* are *not* included in the set of English phonemes but are simply additional symbols to make the writing and reading of transcription easier.
- 9.4 I feel that the subject of syllabic consonants is an area that we need to know more about, and that there has not yet been enough discussion of the problems found in their analysis. See Wells (1965).

## Notes for teachers

Introduction of the "schwa" vowel has been deliberately delayed until this chapter, since I wanted it to be presented in the context of weak syllables in general. Since students should by now be comparatively well-informed about basic segmental phonetics, it is very important that their production and recognition of this vowel should be good before moving on to the following chapters.

This chapter is in a sense a crucial point in the course: although the segmental material of the preceding chapters is important as a foundation, the relationship between strong and weak syllables and the overall prosodic characteristics of words and sentences are essential to intelligibility, and most of the remaining chapters of the course are concerned with such matters.

## Written exercises

The following sentences have been partially transcribed, but the vowels have been left blank. Fill in the vowels, taking care to identify which vowels are weak; put no vowel at all if you think a syllabic consonant is appropriate, but put a syllabic mark beneath the syllabic consonant.

1. A particular problem of the boat was a leak  
p t k l pr b l m v Ø b t w z l k
2. Opening the bottle presented no difficulty  
p n ŋ Ø b t l pr z nt d n d f k l t
3. There is no alternative to the Government's proposal  
Ø r z n l t n t v t Ø g v n m nt s pr p z l
4. We ought to make a collection to cover the expenses  
w t t m k l k f n t k v Ø k s p n s z
5. Finally they arrived at a harbour at the edge of the mountains  
f n l Ø r v d t h b r t Ø d ʒ v m nt nz

## 12 Weak forms

Chapter 9 discussed the difference between strong and weak syllables in English. We have now moved on from looking at syllables to looking at words, and we will consider certain well-known English words that can be pronounced in two different ways, which are called **strong forms** and **weak forms**. As an example, the word 'that' can be pronounced *ðæt* (strong form) or *ət* (weak form). The sentence 'I like that' is pronounced *aɪ laɪk ðæt* (strong form); the sentence 'I hope that she will' is pronounced *aɪ həʊp ət ʃi wɪl* (weak form). There are roughly forty such words in English. It is possible to use only strong forms in speaking, and some foreigners do this. Usually they can still be understood by other speakers of English, so why is it important to learn how weak forms are used? There are two main reasons; firstly, most native speakers of English find an "all-strong-form" pronunciation unnatural and foreign-sounding, something that most learners would wish to avoid. Secondly, and more importantly, speakers who are not familiar with the use of weak forms are likely to have difficulty understanding speakers who do use weak forms; since practically all native speakers of British English use them, learners of the language need to learn about these weak forms to help them to understand what they hear.

We must distinguish between **weak forms** and **contracted forms**. Certain English words are shortened so severely (usually to a single phoneme) and so consistently that they are represented differently in informal writing, e.g. 'it is' – 'it's'; 'we have' – 'we've'; 'do not' – 'don't'. These contracted forms are discussed in a later chapter, and are not included here.

Almost all the words which have both a strong and weak form belong to a category that may be called **function words** – words that do not have a dictionary meaning in the way that we normally expect nouns, verbs, adjectives and adverbs to have. These function words are words such as auxiliary verbs, prepositions, conjunctions, etc., all of which are in certain circumstances pronounced in their strong forms but which are more frequently pronounced in their weak forms. It is important to remember that there are certain contexts where only the strong form is acceptable, and others where the weak form is the

normal pronunciation. There are some fairly simple rules; we can say that the strong form is used in the following cases:

- i) For many weak-form words, when they occur at the end of a sentence. For example, the word 'of' has the weak form əv in the following sentence:

'I'm fond of chips' aɪm 'fɒnd əv 'tʃɪps

but when it comes at the end of the sentence, as in the following example, it has the strong form ɒv:

'Chips are what I'm fond of' 'tʃɪps ə 'wɒt aɪm 'fɒnd ɒv

Many of the words given below (particularly the first nine) never occur at the end of a sentence, e.g. 'the', 'your'. Some words (particularly the pronouns numbered 10–14 below) *do* occur in their weak forms in final position.

- ii) When a weak-form word is being *contrasted* with another word, e.g.:

'The letter's *from* him, not *to* him' ðə 'letəz 'frɒm ɪm nɒt 'tu: ɪm

A similar case is what we might call a co-ordinated use of prepositions:

'I travel to and from London a lot' aɪ 'trævl 'tu: ən 'frɒm 'lɒndən ə 'lɒt

'A work of and about literature' ə 'wɜ:k 'ɒv ən ə 'baʊt 'lɪtrətʃə

- iii) When a weak-form word is given stress for the purpose of emphasis, e.g.:

'You *must* give me more money' ju 'mʌst 'ɡɪv mi 'mɔ: 'mʌni

- iv) When a weak-form word is being "cited" or "quoted", e.g.:

'You shouldn't put "and" at the end of a sentence'

ju 'ʃʊdnt put 'ænd æt ði 'end əv ə 'sentəns

Another point to remember is that when weak-form words whose spelling begins with 'h' (e.g. 'her', 'have') occur at the beginning of a sentence, the pronunciation is with initial h, even though this is usually omitted in other contexts.



TU 12,  
Exs 1–4

In the rest of this chapter, the most common weak-form words will be introduced.

### 1. 'THE'

Weak forms: ðə (before consonants)

'Shut the door' 'ʃʌt ðə 'dɔ:

ði (before vowels)

'Wait for the end' 'weɪt fə ði 'end

### 2. 'A', 'AN'

Weak forms: ə (before consonants)

'Read a book' 'ri:d ə 'bʊk

ən (before vowels)

'Eat an apple' 'i:t ən 'æpl



## 3. 'AND'

Weak form: ən (sometimes ŋ after t, d, s, z, ʃ)

'Come and see' 'kʌm ən 'si:

'Fish and chips' 'fɪʃ ŋ 'tʃɪps

## 4. 'BUT'

Weak form: bət 'It's good but expensive' its 'gʊd bət  
ɪks'pensɪv

## 5. 'THAT' (This word only has a weak form when used in a relative clause; when used with a demonstrative sense it is always pronounced in its strong form.)

Weak form: ðət 'The price is the thing that annoys me' ðə  
'praɪs ɪz ðə 'θɪŋ ðət ə'noɪz mi

## 6. 'THAN'

Weak form: ðən 'Better than ever' 'betə ðən 'evə

## 7. 'HIS' (when it occurs before a noun)

Weak form: ɪz (hɪz at the beginning of a sentence)

'Take his name' 'teɪk ɪz 'neɪm

(Another sense of 'his', as in 'it was his', or 'his was late', always has the strong form.)

## 8. 'HER' (When used with possessive sense, preceding a noun; as an object pronoun, this can also occur at the end of a sentence.)

Weak forms: ə (before consonants)

'Take her home' 'teɪk ə 'həʊm

ər (before vowels)

'Take her out' 'teɪk ər 'aʊt

## 9. 'YOUR'

Weak forms: jə (before consonants)

'Take your time' 'teɪk jə 'taɪm

jər (before vowels)

'On your own' 'ɒn jər 'əʊn

## 10. 'SHE', 'HE', 'WE', 'YOU'

This group of pronouns has weak forms pronounced with weaker vowels than the i: and u: of their strong forms. I will use the symbols i and u (in preference to ɪ and ʊ) to represent them. There is little difference in the pronunciation in different places in the sentence, except in the case of 'he'.

Weak forms:

'SHE' ʃi

'Why did she read it?' 'waɪ dɪd ʃi 'ri:ɪd ɪt

'Who is she?' 'hu: ɪz ʃi

'HE' i (the weak form is usually pronounced without h except at the beginning of a sentence)

'Which did he choose?' 'wɪtʃ dɪd i 'tʃu:z

'He was late, wasn't he?' hi wəz 'leɪt 'wɒzn̩t i

'WE' wi

'How can we get there?' 'haʊ kən wi 'get ðə

'We need that, don't we?' wi 'ni:d ðæt 'dəʊnt wi

'YOU' ju

'What do you think?' 'wɒt də ju 'θɪŋk

'You like it, do you?' ju 'laɪk ɪt 'du: ju

11. 'HIM'

Weak form: ɪm

'Leave him alone' 'li:v ɪm ə'ləʊn

'I've seen him' aɪv 'si:n ɪm

12. 'HER'

Weak form: ə (hə when sentence-initial)

'Ask her to come' 'ɑ:sk ə tə 'kʌm

'I've met her' aɪv 'met ə

13. 'THEM'

Weak form: ðəm

'Leave them here' 'li:v ðəm 'hɪə

'Eat them' 'i:t ðəm

14. 'US'

Weak form: əs

'Write us a letter' 'raɪt əs ə 'leɪtə

'They invited all of us' ðeɪ ɪn'vaɪtɪd

'ɔ:l əv əs

The next group of words (some prepositions and other function words) occur in their strong forms when they are final in a sentence; examples of this are given. (19 is a partial exception.)

15. 'AT'

Weak form: ət

'I'll see you at lunch' aɪl 'si: ju ət

'lʌŋʃ

In final position: æt

'What's he shooting at?' 'wɒts ɪ

'ʃu:tɪŋ æt

16. 'FOR'

Weak form: fə (before consonants)

'Tea for two' 'ti: fə 'tu:

fər (before vowels)

'Thanks for asking' 'θæŋks fər 'ɑ:skɪŋ

In final position: fɔ:

'What's that for?' 'wɒts 'ðæt fɔ:

17. 'FROM'

Weak form: frəm

'I'm home from work' aɪm 'həʊm frəm

'wɜ:k

In final position: **frɒm**

'Here's where it came from' 'hɪəz  
weər ɪt 'keɪm frɒm

## 18. 'OF'

Weak form: **əv**

'Most of all' 'məʊst əv 'ɔ:l

In final position: **ɒv**

'Someone I've heard of' 'sʌmwʌn əv  
'hɜ:d ɒv

## 19. 'TO'

Weak forms: **tə** (before consonants)

'Try to stop' 'traɪ tə 'stop

**tu** (before vowels)

'Time to eat' 'taɪm tu 'i:t

In final position: **tu** (It is not usual to use the strong form **tu:**, and the pre-consonantal weak form **tə** is never used.)

'I don't want to' aɪ 'dəʊnt 'wɒnt tu

## 20. 'AS'

Weak form: **əz**

'As much as possible' əz 'mʌtʃ əz  
'pɒsɪbəl

In final position: **æz**

'That's what it was sold as' 'ðætɪz  
'wɒt ɪt wəz 'səʊld æz

## 21. 'SOME'

This word is used in two different ways. In one sense (typically, when it occurs before a countable noun, meaning "an unknown individual") it has the strong form:

'I think some animal broke it' aɪ 'θɪŋk sʌm 'ænɪməl  
'brəʊk ɪt

It is also used before uncountable nouns (meaning "an unspecified amount of") and before other nouns in the plural (meaning "an unspecified number of"), in such uses it has the weak form **səm**.

'Have some more tea' 'hæv sʌm 'mɔ: 'ti:

In final position: **sʌm**

'I've got some' aɪv 'gɒt sʌm

## 22. 'THERE'

When this word has a demonstrative function, it always occurs in its strong form **ðeə** (**ðeər** before vowels), e.g.

'There it is' 'ðeər ɪt 'ɪz

'Put it there' 'put ɪt 'ðeə

Weak forms: **ðə** (before consonants)

'There should be a rule' ðə 'ʃʊd bi  
ə 'ru:l

ðər (before vowels)

'There is' ðər 'ɪz

In final position the pronunciation may be ðə or ðeə.

'There isn't any, is there?' ðər 'ɪznt eni 'ɪz ðə

or ðər 'ɪznt eni 'ɪz ðeə

The remaining weak-form words are all auxiliary verbs, which are always used in conjunction with (or at least implying) another ("full") verb. It is important to remember that in their negative form (i.e. combined with 'not') they never have the weak pronunciation, and some (e.g. 'don't', 'can't') have different vowels from their non-negative strong forms.

### 23. 'CAN', 'COULD'

Weak forms: kən, kəd

'They can wait' 'ðeɪ kən 'wert

'He could do it' 'hi: kəd 'du: ɪt

In final position: kæn, kʊd

'I think we can' aɪ 'θɪŋk wi kæn

'Most of them could' 'məʊst əv ðəm  
kʊd

### 24. 'HAVE', 'HAS', 'HAD'

Weak forms: əv, əz, əd (with initial h in initial position)

'Which have you seen?' 'wɪtʃ əv ju  
'si:n

'Which has been best?' 'wɪtʃ əz 'bi:ʃ  
'best

'Most had gone home' 'məʊst əd 'ɡɒn  
'həʊm

In final position: hæv, hæz, hæd

'Yes, we have' 'jes wi 'hæv

'I think she has' aɪ 'θɪŋk ʃi 'hæz

'I thought we had' aɪ 'θɔ:t wi 'hæd

### 25. 'SHALL', 'SHOULD'

Weak forms: ʃəl or ʃl; ʃəd

'We shall need to hurry' wi ʃl 'ni:d tə  
'hʌri

'I should forget it' 'aɪ ʃəd fə'get ɪt

In final position: ʃæl, ʃʊd

'I think we shall' aɪ 'θɪŋk wi 'ʃæl

'So you should' 'səʊ ju 'ʃʊd

### 26. 'MUST'

This word is sometimes used with the sense of forming a conclusion or deduction, e.g. 'she left at 8 o'clock, so she must have arrived by now'; when 'must' is used in this way, it is rather less

likely to occur in its weak form than when it is being used in its more familiar sense of "obligation".

Weak forms: məs (before consonants)

'You must try harder' ju məs 'traɪ 'hɑ:də

məst (before vowels)

'He must eat more' hi məst 'i:t 'mɔ:

In final position: mʌst

'She certainly must' ʃi 'sɜ:tɪnli 'mʌst

## 27. 'DO', 'DOES'

Weak forms:

'DO' də (before consonants)

'Why do they like it?' 'waɪ də ðeɪ

'laɪk ɪt

du (before vowels)

'Why do all the cars stop?' 'waɪ du

ɔ:l ðə 'kɑ:z 'stɒp

'DOES' dəz

'When does it arrive?' 'wen dəz ɪt

ə'reɪv

In final position: du:, dʌz

'We don't smoke, but some people do'

'wi: dəʊnt 'sməʊk bət 'sʌm 'pi:pəl 'du:

'I think John does' aɪ 'θɪŋk

'dʒɒn dʌz

## 28. 'AM', 'ARE', 'WAS', 'WERE'

Weak forms: əm

'Why am I here?' 'waɪ əm aɪ 'hɪə

ə (before consonants)

'Here are the plates' 'hɪər ə ðə 'pleɪts

ər (before vowels)

'The coats are in there' ðə 'kəʊts ər

ɪn 'ðeə

wəz 'He was here a minute ago' hi wəz

'hɪər ə 'mɪnɪt ə'gəʊ

wə (before consonants)

'The papers were late' ðə 'peɪpəz

wə 'leɪt

wər (before vowels)

'The questions were easy' ðə 'kwestʃənz

wər 'i:zi

In final position: əm, ɑ:, wɒz, wɜ:

'She's not as old as I am' ʃɪz 'nɒt

əz 'əʊld əz 'aɪ əm

'I know the Smiths are' aɪ 'nəʊ

ðə 'smɪθs ɑ:

'The last record was' ðə 'lɑ:st

'rekɔ:d wɒz

'They weren't as cold as we were'

ðeɪ 'wɜ:nt əz 'kəʊld əz 'wi: wɜ:

## Notes on problems and further reading

This chapter is almost entirely practical. All books about English pronunciation devote a lot of attention to these words. Some of them give a great deal of importance to using weak forms, but do not stress the importance of also knowing when to use the strong forms, something which I feel is very important. See Mortimer (1984).

## Written exercises

In the following sentences, the transcription for the weak-form words is left blank. Fill in the blanks, taking care to use the appropriate form.

1. I want her to park that car over there.  
aɪ wɒnt      pɑ:k      kɑ:r əʊvə
2. Of all the proposals, the one that you made is the silliest.  
ɔ:l      prəpəʊzɪz      wʌn      meɪd      sɪliəst
3. Jane and Bill could have driven them to and from the party.  
dʒeɪn      bɪl      dɪrɪvən      pɑ:ti
4. To come to the point, what shall we do for the rest of the week?  
kʌm      pɔɪnt wɒt      rest      wi:k
5. Has anyone got an idea where it came from?  
enɪwʌn gɒt      aɪdɪə weər ɪt keɪm
6. Pedestrians must always use the crossings provided for them.  
pədestriənz      ɔ:lweɪz ju:z      krɒsɪŋz      prəvaɪdɪd
7. Each one was a perfect example of the art that had been developed there.  
i:tʃ wʌn      pɜ:fɪkt ɪgzɑ:mpəl      ɑ:t      bi:n dɪveləpt